EXHIBIT A

UNITED STATES DISTRICT COURT

DISTRICT OF MINNESOTA

- -

In Re:

Bair Hugger Forced Air Warming

Products Liability Litigation

This Document Relates To:

All Actions MDL No. 15-2666 (JNE/FLM)

- -

DEPOSITION OF RICHARD P. WENZEL, M.D., MSc.

VOLUME I, PAGES 1 - 370

AUGUST 4, 2017

(The following is the deposition of RICHARD P. WENZEL, M.D., MSc., taken pursuant to Notice of Taking Deposition, via videotape, at the Hausfeld law firm, 1700 K Street Northwest, Suite 650, in the City of Washington, District of Columbia, commencing at approximately 9:08 o'clock a.m., August 4, 2017.)

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ALSO PRESENT:

Ronald M. Huber, Videographer

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PROCEEDINGS

(Witness sworn.)

RICHARD P. WENZEL, M.D., MSc.,

Called as a witness, being first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. ASSAAD:

09:08:59 **Q.** Please state your name.

09:09:00 **A.** Richard Wenzel.

09:09:03 **Q.** And what's your current address?

09:09:05 **A.** 1420 Mosquito Point Road, White Stone, Virginia. Home address you wanted.

09:09:11 **Q.** Yeah. And your business address, if you have one?

09:09:14 **A.** The post office is P.O. Box 901, and again White Stone, Virginia, 22578, so.

09:09:21 **Q.** Are you still affiliated with Virginia Commonwealth University?

09:09:25 **A.** Yep. I'm still teaching. I'm sort of formally retired, but they bring us back every now and then. So I -- I teach.

09:09:33 **Q.** Have you had your deposition taken before?

09:09:36 **A.** Never.

09:09:37 **Q.** This is your first time?

produced to counsel listed in your expert report?
A. I think so.
Q. Okay. You do understand that today you're under oath; correct?
A. I do.
Q. And that's under penalty of perjury; correct?
A. That's correct.
Q. If you realize that anything in your report is incorrect or wrong, this is the time to inform us. Do you understand that?
A. I do.
Q. Okay. Now it's my understanding, from reading your report, that you don't believe that infections can be caused by airborne contaminants in the operating room. Is that true?
A. I don't think that's exactly what I said. I think the key element of my report is I couldn't find evidence linking the Bair Hugger to harm, and then I went through a great deal of papers to show that I think most infections, the vast majority, come from the patient's own microbiome. I'm not sure that's your question, but that...
Q. So you -- it's your opinion that most of the infections that occur during a total knee or total hip

arthroplasty come from the patient's own biome, microbiome.
A. Yes, I do.
Q. Okay. And that's based on research that you reviewed?
A. Research that I reviewed, yeah.
Q. Okay. And we'll get to that soon.
And when we're talking about infections during total hip/total knee arthroplasty we're talking about any type of infection, not infections that may be caused by a Bair Hugger, correct, that are caused by the human biome?
A. I'm not sure. The question again?
Q. Well before you limited to your -- your opinion that the Bair Hugger doesn't cause infections. Do you recall that?
A. Yeah. What I said is I couldn't find evidence that would link the Bair Hugger to any link to infections.
Q. Okay. My question is: With respect to just total hip and total knee, irrespective of the source of the -- or what may or may not cause the infections, it's your opinion that the majority of those infections are caused by bacteria on the patient's own biome.

A. I do, yes.
Q. Okay. Is it my understanding that the majority of the time you spent on formulating your opinions was doing a literature review?
A. Yes.
Q. Okay. You didn't do any biological testing; correct?
A. That's correct.
Q. You looked at no internal 3M documents; correct?
A. That's correct.
Q. Okay. You didn't do any particle testing; correct?
A. That's correct.
Q. Okay. In fact you haven't -- you didn't do any type of original testing.
A. Not related to this case.
Q. Okay. Your report is largely a recitation and cri -- of critiques of various peer-reviewed studies; correct?
A. It's my review of the peer-reviewed studies, and my conclusions based on the data that I saw and my interpretation of the data.
(Wenzel Exhibit 1 marked for identification.)

BY MR. ASSAAD:
Q. What's been marked as Exhibit 1 is a copy of your report. Do you agree with me that that is a complete copy of your report?
A. It looks like it.
Q. Okay. And have you had a chance to review your report before today's deposition?
A. Yes, I have.
Q. Okay. You've reread your entire report before today's deposition?
A. I have.
Q. Okay. And you --
Is there anything that you want to change in your report before we begin?
A. I don't think so, but we'll see.
Q. Sitting today, these are your complete opinions and all of the sources that you rely upon to formulate your opinions as of June 2nd, 2017 when you submitted this report.
A. Are there other articles out there, are you asking, --
Q. No.
A. -- that I might have thought about since then, or?
Q. Well I'm asking about articles and

09:42:32 **A.** Not sure, but probably.
09:42:33 **Q.** Okay. So you didn't receive any internal
09:42:36 testing of the Bair Hugger from 3M?
09:42:38 **A.** No.
09:42:39 **Q.** You didn't receive any --
09:42:41 Did you receive any of the computational
09:42:48 fluid dynamics studies that were done internally by
09:42:52 3M?
09:42:52 **A.** No.
09:42:53 **Q.** Did you receive any of the schlieren studies
09:42:56 that were done internally by 3M?
09:42:58 **A.** No.
09:42:58 **Q.** Did you see --
09:42:59 Did you get any of the calculations done
09:43:03 with respect to whether or not the Bair Hugger
09:43:05 disrupts unidirectional flow that was done internally
09:43:11 by 3M?
09:43:12 **A.** No.
09:43:12 MR. COREY GORDON: Object to the form of
09:43:13 the question.
09:43:14 MR. ASSAAD: Basis?
09:43:15 MR. COREY GORDON: Assumes facts not in
09:43:18 evidence, and -- and the predicate of the question is
09:43:22 actually contrary to evidence.
09:43:23 MR. ASSAAD: Okay.

09:43:25 **Q.** Did you receive any of the -- Strike that.
09:43:40 Did you see the computational fluid dynamic
09:44:05 videos perfor -- prepared by Dr. Elghobashi?
09:44:09 **A.** Was that a Science Day? I can't remember --
09:44:11 **Q.** No.
09:44:11 **A.** -- whether he had one. Then I probably
09:44:13 didn't see it.
09:44:14 **Q.** Did you see the videos prepared by Dr.
09:44:17 Abraham?
09:44:17 **A.** I think he had that at Science Day. That's
09:44:20 all I saw, yes.
09:44:22 **Q.** Okay. But my understanding is because your
09:44:27 opinion is that most of the infections that cau --
09:44:30 most of the bacteria that causes surgical-site
09:44:32 infections is on the patient's flora, that airflow in
09:44:37 the operating room is -- is not that -- is not as
09:44:43 important as other areas with respect to infection.
09:44:46 MR. COREY GORDON: Object to the form of
09:44:48 the question.
09:44:48 **A.** What I would say is that if you're looking
09:44:50 for the reservoir of the organisms causing
09:44:54 surgical-site infections, my opinion is that they come
09:44:58 from the patient the vast majority of time.
09:45:01 **Q.** When you say "vast majority," can you give
09:45:02 me a percentage?

09:45:03 **A.** Well in my report I've said somewhere
09:45:05 between 70 and 90 just based on the data that we have
09:45:09 already.
09:45:10 **Q.** Okay. And that is because, based on your
09:45:15 opinion that if a surgical-site infection occurs that
09:45:25 it's -- it's most likely patient flora and not from
09:45:29 airborne contamination.
09:45:30 MR. COREY GORDON: Object to the form of
09:45:31 the question.
09:45:31 **A.** It's based on my opinion, which is based on
09:45:35 review of the literature that looks at the microbiome
09:45:39 and the influence of the microbiome on the organisms
09:45:44 causing surgical-site infections.
09:45:49 Is that clear, or let me know if you --
09:45:50 **Q.** Well no. I'm just trying to understand your
09:45:53 opinion --
09:45:53 **A.** Yeah.
09:45:53 **Q.** -- and just to sum it up.
09:45:53 **A.** Sure.
09:45:54 **Q.** Your opinion is that the most likely cause
09:45:56 of a surgical-site infection is the pla -- the
09:45:59 patient's flora.
09:46:00 **A.** Yes.
09:46:01 **Q.** Okay. And you don't believe that the --
09:46:09 that the air quality of an operating room causes a

09:46:18 significant risk of surgical-site infection.
09:46:22 MR. COREY GORDON: Object to the form of
09:46:23 the question.
09:46:24 **A.** Well I'm not sure what you mean by
09:46:25 "significant risk," but I think -- I mean, I belie --
09:46:30 I'm interested in infection control, no question, and
09:46:33 I would love the air to be as clean as possible. And
09:46:36 the question really gets to the heart of this is does
09:46:40 air influence the infections or the infection rate,
09:46:48 and it's hard to find a lot of data to support that.
09:46:51 **Q.** Well --
09:46:52 **A.** I -- I don't want to say it's a total
09:46:53 impossibility. I'm one of those guys, you'll ask me a
09:46:56 lot of questions, I won't say "never" or "always."
09:46:59 **Q.** Well let's do it this way to make things
09:47:01 easier. I'm asking for your opinion within a
09:47:05 reasonable degree of medical probability. Okay?
09:47:06 **A.** Umm-hmm.
09:47:07 **Q.** I'm not asking for a hundred percent
09:47:08 certainty.
09:47:09 **A.** Yeah.
09:47:09 **Q.** You understand that?
09:47:10 **A.** Yeah.
09:47:10 **Q.** So it's my understanding that your opinion
09:47:12 is that the mo -- that -- that more likely than not

09:47:16 the air quality in an operating room does not cause a
09:47:19 significant risk in surgical-site infections.
09:47:21 MR. COREY GORDON: Object to the form of
09:47:22 the question.
09:47:22 **A.** I don't know that I would phrase it that
09:47:23 way.
09:47:24 What I would say is most -- the origin, in
09:47:27 other words, the reservoir of the organisms causing
09:47:30 surgical-site infections is the vast majority are
09:47:33 going to be in the patient, they're endogenous, in my
09:47:38 opinion. I -- You know, I want the air to be as pure
09:47:40 as possible. I think there's always a possibility
09:47:44 that air is involved in surgical-site infections. I
09:47:48 think the information that we'd love to have to answer
09:47:52 your question is -- is still not out there clear. And
09:47:55 the reason, in part, if you want to look at laminar
09:47:59 airflow. So right after the Lidwell's really
09:48:03 interesting study, you know, heart and lung, number of
09:48:06 patients, 8,000 patients, randomized, you know, a lot
09:48:11 of hospitals began to then rely on laminar airflow.
09:48:15 So what happened then? So you had Brandt's study, you
09:48:19 know, the total review, and then you had Gastmeier's
09:48:23 review, and then you had a review by Hooper for the
09:48:28 New Zealand and the follow-up New Zealand; four cohort
09:48:33 studies, 300,000 patients, and what they found

09:48:37 actually was the infection rates were a little higher
09:48:41 if you had laminar airflow.
09:48:43 Follow that up. More recently Bischoff has
09:48:47 done a big meta-analysis published in *Lancet*, and what
09:48:51 he showed was in fact with 14 studies, hips and knees,
09:48:57 there is no real improvement when you add all those
09:49:02 data as well from the meta --
09:49:03 **Q.** Can I ask you a question real quick?
09:49:06 **A.** Hmm?
09:49:06 **Q.** Can I ask you a question real quick?
09:49:07 **A.** Yeah.
09:49:08 **Q.** What percentage of hospitals in the United
09:49:10 States use laminar airflow?
09:49:11 **A.** I don't know what the answer is. I don't
09:49:12 think it's the majority.
09:49:14 **Q.** I mean, have you ever been in an operating
09:49:15 room in the United States that has laminar airflow?
09:49:18 **A.** Don't think so.
09:49:20 **Q.** Do you know what laminar airflow is?
09:49:22 **A.** Unidirectional filtered air.
09:49:24 **Q.** That's your understanding of laminar
09:49:25 airflow?
09:49:25 **A.** Yeah. I'm not an expert in laminar.
09:49:27 **Q.** Okay. So when you read studies that discuss
09:49:30 laminar airflow and turbulent airflow, --

09:49:33 **A.** Yeah.
09:49:33 **Q.** -- do you -- don't you think it's important
09:49:35 to understand the difference?
09:49:37 **A.** Yeah.
09:49:37 **Q.** Okay.
09:49:37 **A.** I think I do.
09:49:38 **Q.** So what --
09:49:38 So your difference is one is unidirectional,
09:49:40 and the --
09:49:41 And what's "turbulent" then?
09:49:42 **A.** Turbulent is where there's no effort to sort
09:49:46 of compartmentalize the air either from the side or
09:49:49 from the top that laminar flow is trying to push down
09:49:54 the particles or -- in one way or another.
09:49:59 **Q.** So what's turbulent, then? Where is the air
09:50:01 coming from?
09:50:02 **A.** Turbulent they don't have that. The air is
09:50:05 ambient air coming through a filter that's in the
09:50:07 operating room.
09:50:09 **Q.** But where are the -- where is -- where is
09:50:10 the vents?
09:50:12 MR. COREY GORDON: Objection, lack of
09:50:13 foundation.
09:50:13 **A.** I don't know.
09:50:14 **Q.** I mean, doctor, you agree with me that if

09:50:17 you're going to criticize articles and use it to
09:50:20 formulate your opinions that you should have --
09:50:21 especially discussing laminar flow and turbulent flow,
09:50:25 you should have a good understanding of what the
09:50:27 difference is. Don't you agree?
09:50:28 MR. COREY GORDON: Object to the form of
09:50:29 the question.
09:50:29 **Q.** Don't you agree, doctor?
09:50:30 **A.** I'd love to know more about laminar flow,
09:50:33 but I've -- I've cited 300,000-plus patients who
09:50:37 undergo laminar flow, and then I've cited a
09:50:41 meta-analysis recently.
09:50:43 **Q.** But would it make any difference if 99
09:50:45 percent of the hospitals in the United States don't
09:50:47 use laminar flow?
09:50:49 MR. COREY GORDON: Object to the form of
09:50:49 the question.
09:50:50 **A.** I don't even understand that question.
09:50:51 **Q.** Well you --
09:50:53 Do you know what percentage of hospitals in
09:50:54 the United States use laminar flow?
09:50:56 **A.** No, I don't. I thought it was a minority.
09:50:58 **Q.** Do you think if air comes from the ceiling
09:51:00 that it's laminar flow?
09:51:01 MR. COREY GORDON: Object to the form --

MR. COREY GORDON: Object to the form of the question.
Q. Do you know who he is?
A. I don't think so.
Q. Okay.
MR. ASSAAD: What was the basis?
MR. COREY GORDON: Memarzadeh? I mean, if you want to ask him about a specific study or -- I mean, there are proba --
MR. ASSAAD: Who he is. Who he is.
MR. COREY GORDON: You know, Gabe, I'll bet --
Q. Do you know who Darouiche is? Do you know who Darouiche is?
MR. COREY GORDON: I'll bet there's several hundred people in the United States whose last name is Memarzadeh.
MR. ASSAAD: Okay Corey, great.
Q. Do you know who Darouiche is?
A. I do.
Q. How many Darouiches are there in the United States, do you think?
A. I have no idea.
Q. Okay. But you know the Darouiche I'd be talking about in this case; correct?

A. Yes.
Q. Okay. You mentioned particles in an earlier answer. Do you agree that particles can carry bacteria?
A. Yes, some of them can.
Q. What do you mean by "some of them"?
A. I think the -- I've seen sort of percentages vary, plus or minus 40 percent or something like that.
Q. What percentages carry parti --
In an operating room, what percentage of the particles carry bacteria?
MR. COREY GORDON: Object to the form of the question.
A. Well I don't know, but I'm giving you what I've seen printed in the literature, 40 percent.
Q. Forty percent of the particles in an operating room carry bacteria?
MR. COREY GORDON: Object to the form of the question.
A. Forty percent of particles can carry bacteria. I don't know how well that's been studied in an operating room by itself, but I'm happy to talk about particles.
Q. Well, so -- Do you have a --
Do you have a citation for that?

A. No, I don't.
Q. Okay.
(Wenzel Exhibit 4 marked for identification.)
BY MR. ASSAAD:
Q. Exhibit 4 is a copy of your curriculum vitae. Is this the most up to date copy of your curriculum vitae?
A. I think so.
Q. Are you board certified in infectious disease?
A. I'm board certified in infectious disease and internal medicine.
Q. Okay. I don't want to spend too much time, but please help me out here. I want to go to your publications --
A. Sure.
Q. -- which I believe starts on page -- under your Bibliography. There's no page numbers. I'm sorry.
A. Yeah, there should be. I'm sorry.
Q. Well that's what was provided to me. Is that another mistake?
A. Well --
MR. COREY GORDON: Object to the form of

the question.
A. -- I don't know if it's a mistake. I wish they were there to help you.
Q. Okay. The bibliography sometimes your name is first and sometimes it's last or in the middle. What does that mean with respect to published papers?
A. If you're the first author it's you're the one who really did the work, you were at the front line doing the work and should get the credit as the first author. If you're the last author you're usually the person -- the senior member of the team, helped design the study and helped perhaps with the protocol.
Q. Okay. And you have text books, and journal/book section editor, books for general readership, and monographs. What are the difference between them?
A. Okay. So under the papers, these are -- tend to be peer-reviewed articles published in journals.
Q. Umm-hmm.
A. Monographs are sometimes just someone might say, would you give us a review of something like surgical-site infections, for example, and you put together a brief sort of report that's not peer

10:53:00 **A.** Yeah.
10:53:00 **Q.** Okay. You have 2,397; correct?
10:53:03 **A.** Yeah. Of the hips and anything to do with orthopedics, right.
10:53:05 **Q.** And you said a study of only looking at six weeks will not pick up deep joint infections?
10:53:09
10:53:12 **A.** Might miss a lot of them.
10:53:14 **Q.** Okay. Because they may -- they may occur one year after; correct?
10:53:16
10:53:17 **A.** Could be, but at least out three months. I don't know why you wouldn't do that.
10:53:19
10:53:21 **Q.** I mean some of them even occur two years; correct?
10:53:23
10:53:23 **A.** Some people show up two years later. It's always hard to know, you know, did they have an interim -- intermittent bloodstream infection, but out to a year --
10:53:26
10:53:30
10:53:31
10:53:33 (Interruption by the reporter.)
10:53:34 **A.** -- intermittent bloodstream infection that landed on the device.
10:53:35
10:53:37 **Q.** And -- And there are -- there are some case studies out there that indicate that they could have had -- come up and be five years later if there's no intermittent infection. They trace it back to the implant surgery.
10:53:39
10:53:43
10:53:47
10:53:48

10:53:48 **A.** I've heard that there are case reports like that, yeah. I can't cite any.
10:53:49
10:53:52 **Q.** But you've heard of it; right?
10:53:53 **A.** Yeah.
10:53:54 **Q.** And you don't disagree with it.
10:53:55 **A.** If it's a real report, it's a real report, that's what happened.
10:53:58
10:53:58 **Q.** And -- And --
10:53:59 **A.** But what I'm saying is some -- it's really hard as a clinician, facing those patients, was that patient infected at the time of surgery, just so we're clear, or did they went to the dentist, they have horrible teeth, they had a -- you know, some manipulation in the mouth and they got a secondary bacteremia and they settled on the prosthesis. Five years out you can't tell.
10:54:01
10:54:04
10:54:06
10:54:09
10:54:11
10:54:13
10:54:16
10:54:18 **Q.** Well you know that secondary bacterium theory is under a lot of dispute.
10:54:21
10:54:23 **A.** It might be under dispute, but I'm telling you as a clinician standing in front of the patient.
10:54:24
10:54:28 **Q.** Okay. I understand that, but it's not settled whether or not secondary bacterium from the mouth causes a periprosthetic joint infection. You've read articles --
10:54:31
10:54:35
10:54:39
10:54:39 **A.** That's the deba --

10:54:40 There's a debate going on as to whether or not these patients should all be screened by their oral surgeons or not beforehand because it's a worry.
10:54:41
10:54:44
10:55:18 **Q.** Okay. And since you believe that the most likely cause of a surgical-site infection is patient flora, then you would agree with me that the likelihood that the anesthesia machine caused a surgical-site infection is very low.
10:55:26
10:55:30
10:55:34
10:55:38
10:55:41 MR. COREY GORDON: Object to the form of the question.
10:55:43
10:55:44 **A.** In general I think that's true.
10:55:47 **Q.** Okay.
10:55:48 **A.** Would there be an exception, an outbreak or something like that where something happened? Yeah. But that's what I would say in general, yes, I think it's low.
10:55:50
10:55:51
10:55:53
10:55:54 **Q.** We're talking probabilities here.
10:55:55 **A.** Yeah. No, I'm with you.
10:55:57 **Q.** And you agree with me that the probability that a surgical light causes a surgical-site infection is very low.
10:55:59
10:56:03
10:56:05 (Interruption by the reporter.)
10:56:05 **A.** Yeah, I don't think I've seen any studies related to that.
10:56:08
10:56:08 **Q.** And you'd agree with me that comput -- the

10:56:11 likelihood that computer monitors cause a surgical-site infection, or the fans in them cause a surgical-site infection is very low.
10:56:13
10:56:16
10:56:18 **A.** Yeah. I haven't seen any data linking them.
10:56:23 **Q.** Okay. And you agree with me that the computer console and the equipment in them, the likelihood of them causing a surgical-site infection is very low.
10:56:26
10:56:29
10:56:31
10:56:33 **A.** And again I can't cite any papers that link them, yeah.
10:56:35
10:56:36 **Q.** So you agree with me.
10:56:37 **A.** Yeah.
10:56:37 **Q.** Okay. You agree with me that the electrocautery device itself has a very low likelihood of causing a surgical-site infection.
10:56:41
10:56:49
10:56:52 **A.** Based on not having any data, yeah.
10:56:54 **Q.** So you agree with me.
10:56:55 You agree with me that a bovie is very unlikely to cause a surgical-site infection.
10:57:01
10:57:03 MR. COREY GORDON: Object to the form of the question, also I guess that's asked and answered.
10:57:04
10:57:07 **A.** I just -- Yeah, I just don't know any data with the bovie or the knife or...
10:57:09
10:57:19 **Q.** You agree with me that sterile surgical drapes are very unlikely to cause a surgical-site
10:57:36

infection.

MR. COREY GORDON: Object to the form of the question.

A. I would say that anything sterile is unlikely to cause an infection.

Q. You agree with me that the cabinets along the walls are very unlikely to cause a surgical-site infection.

A. Same answer. I haven't seen any data. I think it's unlikely.

Q. You agree with me that the suction drain that's in the operating room is very unlikely to cause a surgical-site infection.

A. Yeah, I think drains have been known to harbor certain organisms like Pseudomonas, but again, if you say standard procedures that have been, you know, done to try to minimize that, I think it's unlikely.

Q. And when I ask you these questions, doctor, let's just assume that the hospital, the doctors and the nurses are following the standard of care.

A. I'm with you.

Q. Okay.

A. I'll follow that.

Q. Okay. Like, for example --

A. I like infection control, so I'm with you. I'll imagine the perfect hospital.

Q. Okay. Like, for example, we're not expecting a nurse to take off her mask and sneeze right into the surgical site, you know, okay?

A. I would hope so.

Q. Okay. You agree with me that sterilized surgical instruments are very unlikely to cause a surgical-site infection.

MR. COREY GORDON: Object to the form of the question.

A. Yeah, in general again, anything sterile. Now once they're used they're no longer sterile, but, yes, I think that's true, and I agree with you.

Q. Yeah, I understand that when you cut the skin they may no longer be sterile; correct?

A. Yes. That's correct.

Q. However, you do understand that in orthopedic implant surgeries the standard of care is after you make the first incision -- or some surgeons would say after you make the first incision to switch the scalpel.

A. Yes.

MR. COREY GORDON: Object to the form of the question, lack of foundation, assumes facts not

in evidence.

THE WITNESS: Sorry.

Q. The drop buckets for a used sponge, do you agree with me that they're very unlikely to cause a surgical-site infection?

A. Again I'll say the same thing, you know, I don't know any data, so I think it's low probability.

Q. And same question with the trash receptacle. You agree with me the trash receptacle is very unlikely to cause a surgical-site infection.

A. Yes.

Q. And do you agree with me that surgeons moving their hands is very unlikely to cause a surgical-site infection?

MR. COREY GORDON: Object to the form of the question.

A. So a surgeon doing surgery is moving his hands.

Q. He's moving his hands like this [demonstrating].

A. Yeah. And is that a cause, assuming that nothing else is happening? Yeah, I don't think the movement of hands. Now people talk about the movement of hands creating more particles and whether that's linked, we talked about that earlier. It's hard to

show a link with particles and surgical-site infections.

Q. Have you read Dr. Mont's expert report?

A. Yes, I did look at that.

Q. Okay.

A. Yeah.

Q. Do you criticize anything in his report?

A. Yeah, I don't think I saw anything that I'd criticize.

Q. Okay. Do you believe that -- Have you read --

Have you read all the defense expert reports, all the -- all 12 others?

A. No, I don't think I read 12.

Q. Okay. Have you read Dr. Ho's expert report?

A. No, I didn't see that.

Q. Have you read Dr. Kuehn's expert report?

A. No.

Q. Have you read Dr. Abraham's expert report?

A. No.

Q. So what expert reports have you read? Dr. Borak?

A. Borak, Holford.

On this side of the table you mean?

Q. Yes.

11:43:42 **A.** -- and I just can't remember that.
11:43:45 **Q.** And in fact you -- you know, a lot of the
11:43:48 work you did in Walton, except for, you know, stuff
11:43:51 dealing directly with Walton with the medical records,
11:43:54 you used in your report -- or you had that information
11:43:56 that you used in your report in this case; correct?
11:43:58 **A.** I'm sure there are parts in both, yeah.
11:44:00 **Q.** Okay. I mean, you didn't start from scratch
11:44:06 in this case.
11:44:07 **A.** No.
11:44:07 **Q.** Okay. Do you know how much you billed in
11:44:10 Walton?
11:44:11 **A.** Total?
11:44:11 **Q.** Yes.
11:44:12 **A.** I don't remember. I don't -- Maybe somebody
11:44:15 here has it, but.
11:44:18 **Q.** Well by the way, when did you -- when did
11:44:20 you retire from Virginia Commonwealth University?
11:44:23 **A.** So, formally 2013.
11:44:27 **Q.** 2013. So you were retired by the time you
11:44:29 started the Walton case; correct?
11:44:32 **A.** Well, you know, if you were to ask me why'd
11:44:34 you do that, it was -- a lot of it was timing, you
11:44:37 know, I've always been interested in taking care of
11:44:39 these patients. I've never done really a lot

11:44:42 medical/legal.
11:44:43 **Q.** Well that really wasn't my question.
11:44:44 My question was you were retired by the time
11:44:46 you started the Walton case.
11:44:48 **A.** Yeah, that's right.
11:44:48 **Q.** Okay.
11:44:49 **A.** Right about that time, yeah.
11:44:50 **Q.** Okay. And so after you retired was -- was
11:44:51 your -- was most of your income based on doing the
11:44:54 Walton case?
11:44:54 **A.** No. I was fine without it, and the motive
11:44:59 wasn't income, because I've never really done much of
11:45:02 this. It was just curiosity and timing.
11:45:04 **Q.** So what were your sources of income after
11:45:07 you retired?
11:45:07 **A.** Oh, I have a very good retirement from
11:45:10 TIAA-CREF.
11:45:13 **Q.** I understand you have a retirement plan, but
11:45:15 my question is: Besides your retirement plan, what
11:45:17 other income did you -- do you have besides --
11:45:18 **A.** Besides retirement?
11:45:19 **Q.** Uh-huh.
11:45:20 **A.** Occasionally giving talks, sometimes --
11:45:25 yeah, I guess Social Security, if that's what you're
11:45:29 asking, as well.

11:45:31 **Q.** Would you agree with me that most of your
11:45:33 income that you've received since 2013 was -- was most
11:45:37 likely from working on the Bair Hugger case?
11:45:41 **A.** No, I would disagree with that. I would
11:45:44 guess somewhere a quarter to a third maybe in the last
11:45:52 couple years --
11:45:52 **Q.** Okay.
11:45:52 **A.** -- of the total.
11:45:54 **Q.** Now I'm not talking about your pension
11:45:55 income. I'm talking about non-pension income.
11:45:58 **A.** Oh, of non-pension income, yeah. This --
11:46:00 This is a large portion of that.
11:46:02 **Q.** What percentage?
11:46:05 **A.** Oh, it's probably, you know, except for --
11:46:09 It's huge. It's probably 80 percent or more, yeah.
11:46:13 **Q.** Okay. Can you give me roughly how much
11:46:17 you -- you billed in Walton?
11:46:19 **A.** I'm guessing 90,000, something like that,
11:46:22 but --
11:46:22 **Q.** Okay.
11:46:24 **A.** -- don't hold me to it. Go ask them.
11:46:25 **Q.** Around that, give or take 10,000?
11:46:27 **A.** Go ask them. Yeah.
11:46:28 **Q.** Do you have those invoices still?
11:46:30 **A.** I don't think so, but they do, I think, so

11:46:30 you --
11:46:32 **Q.** Greenberg Traurig?
11:46:33 **A.** Yeah. I would just -- If you need that.
11:46:35 **Q.** Did you bill any time for Johnson?
11:46:38 **A.** Probably, yeah.
11:46:39 **Q.** Do you know how much you billed for Johnson?
11:46:41 **A.** No. I think -- I lumped them together when
11:46:41 I --
11:46:41 **Q.** Okay.
11:46:44 **A.** -- gave you that figure, so -- and I'm not
11:46:46 trying to be cagey, I just don't remember.
11:46:49 **Q.** So basically since two thousand -- since you
11:46:53 began in -- began working on this case --
11:46:53 **A.** Yeah.
11:46:54 **Q.** -- you approximate over $300,000.
11:46:57 **A.** Yeah.
11:47:00 **Q.** And my understanding is you -- you billed
11:47:04 over $300,000 to do a -- a literature review and to
11:47:10 formulate opinions off the literature.
11:47:12 MR. COREY GORDON: Object to the form of
11:47:14 the question.
11:47:14 **A.** Yeah, to -- Yeah. I mean basically I
11:47:17 reviewed the literature, came up with opinions, did my
11:47:20 best to cite all the articles, pro or con.
11:47:24 **Q.** Okay. So the answer to my question is

11:52:36 **A.** That's true.
11:52:37 **Q.** Okay. Do you have a company that it goes
11:52:39 to, or it just goes to you personally?
11:52:42 **A.** No.
11:52:42 **Q.** Okay.
11:52:42 **A.** I haven't become sophisticated like that.
11:52:44 **Q.** And it seems like you spent -- the total
11:52:46 number of hours spent is 380 hours -- 380.75 hours.
11:52:59 That sound about right?
11:53:01 **A.** Probably right.
11:53:02 **Q.** Okay. And Ms. Briley spent about 196 hours;
11:53:06 correct?
11:53:06 **A.** Well I didn't add that up, so I'm assuming
11:53:07 you're right.
11:53:08 **Q.** Okay.
11:53:09 **A.** If it matches this, you know.
11:53:10 **Q.** Okay. So that's the total of, you know,
11:53:12 over 500 hours between you and Ms. Briley.
11:53:16 **A.** Umm-hmm.
11:53:16 **Q.** Is that correct?
11:53:17 **A.** Yeah.
11:53:19 **Q.** Okay. And approximately how many hours did
11:53:19 you spend on the Walton-Johnson case?
11:53:23 **A.** I don't know. I mean, that's why I said the
11:53:25 total might have been close to $90,000, so.

11:53:28 **Q.** And you charge how much per hour?
11:53:30 **A.** Six hundred.
11:53:30 **Q.** So 90,000 divided by 600 equals about 150
11:53:35 hours. This sound about right, give or take?
11:53:37 **A.** That sounds about right.
11:53:38 **Q.** Okay. So so far between you and M --
11:53:40 Did Ms. Briley work on the Walton case?
11:53:45 **A.** I think she did, yes.
11:53:49 **Q.** Do you know how many hours that she billed?
11:53:51 **A.** I don't, actually. Don't remember that.
11:54:06 **Q.** So between you and Ms. Briley, and not
11:54:09 counting her time on Walton, the two of you spent over
11:54:12 720 hours on this case.
11:54:15 **A.** Yeah. Sounds about right.
11:54:17 **Q.** Okay. Did you ever recommend to 3M to --
11:54:22 let's -- to do a study?
11:54:24 **A.** No.
11:54:25 **Q.** Okay. Why not?
11:54:29 **A.** I haven't met with 3M.
11:54:30 **Q.** Or their attorneys.
11:54:32 **A.** Ask the attorneys to do a study?
11:54:35 **Q.** I mean, hey, why don't you recommend -- you
11:54:36 should recommend to 3M to do a study?
11:54:38 **A.** I have never asked them that.
11:54:40 **Q.** Okay. You're not an expert in aerobiology;

11:55:00 correct?
11:55:01 **A.** I'm not an expert in aerobiology.
11:55:03 **Q.** You're not an expert in microbiology;
11:55:05 correct?
11:55:06 **A.** In what?
11:55:06 **Q.** Microbiology?
11:55:07 **A.** Well, I'd caution you there. I mean, I
11:55:10 think microbiology is the basis of infectious
11:55:13 diseases, and in that interface between micro and
11:55:17 infectious disease I am an expert.
11:55:19 **Q.** But you're not an microbiologist.
11:55:20 **A.** I'm not a --
11:55:21 I don't have a degree in microbiology.
11:55:23 **Q.** Okay. You don't consider yourself an expert
11:55:29 in orthopedics; correct?
11:55:32 **A.** Only the interface, again, between
11:55:34 orthopedics and infectious diseases. I'm not an
11:55:39 orthopedic surgeon.
11:55:40 **Q.** You don't consider yourself an expert in
11:55:42 medical device design; correct?
11:55:43 **A.** That's true.
11:55:44 **Q.** You don't consider yourself an expert in
11:55:45 medical device warnings; correct?
11:55:47 **A.** Warnings, no.
11:55:48 **Q.** You don't consider yourself an expert in

11:55:50 patient warming; correct?
11:55:50 **A.** In what?
11:55:51 **Q.** Patient warming.
11:55:52 **A.** A expert in patient warming?
11:55:54 **Q.** Yeah.
11:55:55 **A.** Only as it is influenced in this case with
11:55:58 the infectious disease part, but not --
11:56:00 **Q.** And everything that you opine is going to
11:56:03 be --
11:56:03 **A.** -- warming.
11:56:04 **Q.** -- is going to be based on a literature
11:56:05 review and not your own personal --
11:56:10 **A.** That's true.
11:56:10 **Q.** -- directed research.
11:56:11 **A.** Yes, that's --
11:56:11 (Interruption by the reporter.)
11:56:11 (Discussion off the stenographic
11:56:14 record.)
11:56:14 **Q.** Correct?
11:56:14 **A.** Yes.
11:56:15 **Q.** Okay. You're not an expert in operating
11:56:17 room design; correct?
11:56:18 **A.** Correct.
11:56:19 **Q.** Have you read any of the ASHRAE articles or
11:56:24 chapters regarding operating room design?

11:56:26 **A.** Don't think so.
11:56:28 **Q.** Are you aware that it is estimated between
11:56:34 one million to 900 million skin squames are shed
11:56:40 during a two- to four-hour surgery?
11:56:42 MR. COREY GORDON: Object to the form of
11:56:44 the question.
11:56:44 **A.** So I didn't go to the primary literature but
11:56:47 I've seen that in a couple depositions.
11:56:49 **Q.** Do you disagree with that?
11:56:50 **A.** No reason to disagree or agree.
11:56:52 **Q.** Okay. You have no experience in
11:57:02 operating-room airflow; correct?
11:57:05 **A.** Any experience, no.
11:57:06 **Q.** Okay. You don't consider you're an expert
11:57:07 in operating airflow?
11:57:09 **A.** That's true.
11:57:10 **Q.** I think I've asked you this before, but
11:57:11 you're not an expert in particle flow; correct?
11:57:13 **A.** In particle flow, no. I'm not.
11:57:16 **Q.** Do you agree with me that Dr. Elghobashi is
11:57:18 an expert in particle flow and turbulent air?
11:57:21 MR. COREY GORDON: Object to the form of
11:57:22 the question, lack of foundation.
11:57:22 **A.** I have no idea of his expertise.
11:57:24 **Q.** Well you've rea -- you've seen his report;

11:57:26 correct?
11:57:26 **A.** Yeah. I didn't understand most of it.
11:57:26 **Q.** Did you --
11:57:27 And you didn't have an opportunity to
11:57:29 compare our expert's report to defense expert's
11:57:31 report; did you?
11:57:32 **A.** No. Only what I saw on Science Day,
11:57:35 basically.
11:57:36 **Q.** Okay. And you're not an expert in turbulent
11:57:44 flow; correct?
11:57:45 **A.** In turbulent flow? No, I'm not an expert in
11:57:48 turbulent flow.
11:57:49 **Q.** Okay. Have you read the Complaint in this
11:58:01 case?
11:58:06 **A.** I think I may have read it at the time of
11:58:09 Walton, and -- I remember seeing that.
11:58:12 **Q.** Okay.
11:58:13 **A.** More recently I don't think I looked at
11:58:14 anything.
11:58:15 **Q.** What is your understanding of plaintiffs'
11:58:17 claims in this case with respect to the mechanism of
11:58:20 injury of a Bair Hugger causing a -- an infection?
11:58:27 **A.** My understanding is that the plaintiffs are
11:58:30 saying that there is heat generated from the Bair
11:58:36 Hugger, and it creates currents, particularly --

11:58:41 including, at least, a downflow current towards the
11:58:44 floor, whipping up some kind of particles into the air
11:58:51 near the operative site, and therefore they think that
11:58:56 the Bair Hugger, having done that, relates to
11:59:01 infections. That's my understanding.
11:59:03 **Q.** You don't disagree that the Bair Hugger
11:59:04 generates heat; correct?
11:59:06 **A.** It does generate some heat.
11:59:08 **Q.** Well do you know how much heat?
11:59:10 **A.** I don't.
11:59:10 **Q.** Okay. Well you used the term "some." Do
11:59:13 you know -- You're just -- you're not --
11:59:15 You're not quantifying it; correct?
11:59:16 **A.** I'm not.
11:59:17 **Q.** Okay. You do agree that the Bair Hugger,
11:59:20 the holes are facing down; correct?
11:59:22 **A.** Yes.
11:59:22 **Q.** Onto the patient?
11:59:23 **A.** Yes.
11:59:24 **Q.** In an orthopedic surgery.
11:59:25 **A.** Yes.
11:59:25 **Q.** Okay. So you do agree that it creates
11:59:27 current, air currents.
11:59:29 **A.** I think it does.
11:59:30 **Q.** Okay. And you agree that --

11:59:37 Do you know what the first law of
11:59:38 thermodynamics is?
11:59:39 **A.** No. I know you like to ask that question,
11:59:42 but I don't know it.
11:59:44 **Q.** How do you know I like to ask that question?
11:59:46 **A.** Somewhere in -- you were deposing somebody
11:59:48 and it was one of your earlier questions.
11:59:50 **Q.** Okay. Do you agree that hot air is less
11:59:54 dense than cold air? If you know.
11:59:57 **A.** Yes, I think. Less dense, yes.
12:00:01 **Q.** You've seen a hot air balloon; correct?
12:00:04 **A.** Yes.
12:00:04 **Q.** Okay. And hot air balloons actually rise;
12:00:05 correct?
12:00:06 **A.** Yeah, they do.
12:00:07 **Q.** Okay. You're not going to disagree with the
12:00:08 laws of thermodynamics; are you?
12:00:10 **A.** I have no idea what the law of
12:00:11 thermodynamics is.
12:00:12 **Q.** Okay. Okay. You're going to defer to the
12:00:13 engineers in this case.
12:00:14 **A.** To you.
12:00:15 **Q.** To me? You'd defer --
12:00:15 **A.** Yeah.
12:00:16 **Q.** -- to me as well. Okay.

Unfortunately, I can't testify.
(Laughter.)
Q. Which is a good thing, because I think Corey would love to take my deposition.
And you agree with me that skin squames have a mass; correct?
A. "Have a mass"? You mean they're not just energy, is that what you're asking?
Q. Yes.
A. Yes.
Q. Okay. And you agree with me that gravity exists in an operating room; correct?
A. It exists everywhere.
Q. Okay. Now just so I understand your opinion, assuming that the plaintiffs' engineering theory is correct that the hot air causes contaminated air from underneath the operating table to rise to above the operating room surgical table, is it correct that your opinion is going to be that since you believe that most of the surgical-site infections are caused by the patient's flora, that the effect of the Bair Hugger is irrelevant?
MR. COREY GORDON: Object to the form of the question, incomplete hypothetical.
A. I've told you separately I think most

infections come from the patient flora, no question. Now you're asking me a hypothetical assuming that everything that the plaintiffs say is correct, would that have an influence. And it might, but that's an assumption.
Q. So -- So if the plaintiffs are correct that the Bair Hugger causes contaminants from underneath the operating room floor to actually go into the -- above and into the surgical site, that may have an effect on your opinion?
A. If everything that you say was validated, and I don't -- I don't think we're there yet, in this hypothetical situation, it might contribute. We have no data, I think, to really convince people that the Bair Hugger actually leads to infections.
Q. Okay. How do we get there?
A. How do we get the data?
Q. Yeah.
A. Well what I've tried to do is do the following.
Q. Well I understand what you did. You said we're not there yet. That was your -- That was your answer. So how do we -- What would you do today to determine the answer to that question? Not looking at literature in the past, but what would you do today?

A. So if -- if there, you know, was a study that was being planned, one of the things I would do is link the -- what was found in the air, microbiologically, with what was found somewhere else, not on the patient flora, if you could do that. Because you're positing that things come up from the floor. And link what's on the floor, link what's in the air and link what's in the patient's wound, and show me it's the same -- pick a organism, Staph aureus, with the same fingerprint.
Q. Okay. And how many patients do you think you would need to do that study?
A. I don't know.
Q. Like -- Like 50, a thousand, 10,000?
MR. COREY GORDON: Object to the form of the question, lack of foundation.
A. Well --
Q. And I'm talking about with respect to a total hip or total knee arthroplasty.
A. You'd need a lot of patients to show -- to show that. And you have to do a multi-centered study, and we'll get a statistician to look at what you'd expect. But I, off the cuff, wouldn't come up with an answer.
Q. So you'd want to do microbiological sampling

of, like, what's underneath the operating room table; correct?
A. Yeah, because you said that's where it starts.
Q. And you want to do microbio -- microbiological sampling of the patient's flora in the wound.
A. Right.
Q. Okay. And I think you said one other microbiologic sample.
A. It would have to be in the air --
Q. Okay.
A. -- because you said it comes up in the air, in your hypothetical.
Q. So what's in the air before you turn the Bair Hugger on; correct?
A. Before and during.
Q. Okay, during.
And then you want to also determine which patients obtained infections; correct?
A. Right. Right.
Q. And so for total hip and total knee you might need 10,000 patients.
A. A lot of patients.
Q. Okay. And so that study would be very,

12:17:20 **A.** I think I've seen up to --
12:17:22 **Q.** Okay.
12:17:23 **A.** -- four or five.
12:17:24 **Q.** Okay. And some might have a cluster on it
12:17:26 that might have 20, 30.
12:17:28 **A.** Yeah, I don't know that.
12:17:29 **Q.** Okay. I mean, bacteria go into clusters;
12:17:33 correct?
12:17:33 **A.** They do clump.
12:17:35 **Q.** Okay. And they could clump as few as 3 and
12:17:36 as many as hundreds.
12:17:38 **A.** Yeah, I don't know about hundreds. I just
12:17:40 -- I just can't say I know that, but maybe.
12:17:44 **Q.** More than ten.
12:17:45 **A.** Yeah.
12:17:45 **Q.** Probably more than twenty.
12:17:46 **A.** I don't know.
12:17:48 **Q.** Okay. So there is a difference with respect
12:17:53 to the infection dose of an implant if the bacteria
12:17:58 lands on an implant as compared to the -- if the
12:18:00 bacteria lands on -- on skin.
12:18:02 **A.** That's not what they really showed. They
12:18:04 didn't say "land on." They injected it.
12:18:07 **Q.** Okay. Well --
12:18:08 **A.** That's different. Surgeons don't go in and

12:18:11 shoot a number of organisms into the joint.
12:18:15 **Q.** Well you agree with me that -- forget about
12:18:18 the way it -- the bacteria gets there, okay, whether
12:18:21 or not it's -- it's injected. I mean, the bacteria
12:18:23 got to the joint in this case; correct? To the -- the
12:18:27 prosthesis.
12:18:28 **A.** But how can I forget how they got there?
12:18:28 **Q.** Okay.
12:18:30 **A.** I'm not sure --
12:18:31 **Q.** So is that a limitation of the study?
12:18:34 **A.** Oh. Well if you want to posit that the air
12:18:37 is important, nobody has done the infectious dose by
12:18:41 the air.
12:18:43 **Q.** Well that would be unethical, wouldn't it,
12:18:46 in a human?
12:18:46 **A.** Well that would be unethical in a human, but
12:18:49 you could count, in the study that I was proposing, or
12:18:52 in another study, show me that one organism in the
12:18:55 air, a markered orga -- markered species that landed
12:19:01 later into the wound, not start with the wound and go
12:19:01 out, --
12:19:01 **Q.** Let me ask you this --
12:19:04 **A.** -- and then caused an infection with that
12:19:06 same --
12:19:06 **Q.** Okay.

12:19:06 **A.** -- genus and species and same fingerprint.
12:19:10 **Q.** Let me ask you this question.
12:19:12 **A.** Yeah.
12:19:14 **Q.** If Darouiche's study, the one that came out
12:19:17 recently which you emailed him about. Do you recall
12:19:19 that?
12:19:20 **A.** Yeah.
12:19:20 **Q.** Okay. He did a microbiology study and it
12:19:21 indicated that the -- the -- the bacteria came from
12:19:26 the air, you know, because of the increased bacterial
12:19:30 load over -- over the surgical site. Would that
12:19:32 change your opinion in this case?
12:19:34 **A.** What he showed was a correlation between
12:19:38 particles and bacteria and the four infections, and he
12:19:43 modeled that to get the correlation.
12:19:45 **Q.** And your criticism of him is that he didn't
12:19:48 do any microbiological testing.
12:19:49 **A.** That's one, yeah, sure. I think that's
12:19:51 important.
12:19:52 **Q.** Because you're not sure whether the bacteria
12:19:54 came from the flora or from the air; correct? The
12:19:57 patient's flora or the air.
12:19:58 **A.** Yeah.
12:19:58 **Q.** Okay. If he did do microbiological testing
12:20:00 and indicated that the bacteria that caused the

12:20:02 infections came from the bacteria that was in the air,
12:20:04 would that change your opinion with respect to whether
12:20:07 or not bacterial load in the air has a -- has a impact
12:20:10 on periprosthetic joint infections?
12:20:12 **A.** Well --
12:20:12 MR. COREY GORDON: Object to the form of
12:20:12 the question, --
12:20:12 **A.** Yeah.
12:20:14 MR. COREY GORDON: -- misstate --
12:20:15 mischaracterizes his testimony.
12:20:16 THE WITNESS: Thank you. I didn't mean to
12:20:17 interrupt, but.
12:20:18 **A.** So one of the things you would like to know
12:20:21 is if there's an organism in the air and if we did
12:20:25 this hypothetical study where we actually had good
12:20:29 microbiology; did it start, first of all, in the flora
12:20:32 of the patient, the microbiome, somehow get into the
12:20:35 air -- I mean, I can imagine how that might happen,
12:20:38 and then land -- or are we talking about a totally
12:20:42 different organism that started on the ground, which
12:20:45 is what you postulated initially, got whipped up by a
12:20:49 device and then hung over the wound and then caused
12:20:54 the infection.
12:20:57 **Q.** Are you asking me a question?
12:20:59 **A.** Well, no. I'm just trying to answer you.

12:54:30 **Q.** The third one down, New Zealand --
12:54:30 **A.** Oh, third one down.
12:54:30 **Q.** Yes.
12:54:30 **A.** Oh, okay.
12:54:32 **Q.** I'm sorry, that's the second New Zealand.
12:54:34 **A.** All right. Okay.
12:54:35 **Q.** New Zealand likes their rabbits, I guess, huh?
12:54:37 **A.** Yeah. Okay. Got it.
12:54:39 **Q.** So you agree that study wasn't -- it was just to show the mechanism of these implants getting infected, they didn't look at inoculation dose.
12:54:48 **A.** Well a lot of studies in fact are trying to get as high a infected dose so they can actually track what's going on with these type of infections rather than scaling up the dose to know exactly what the ID_{50} is, for example.
12:55:04 **Q.** Exactly.
12:55:04 And this study, if you recall, they were looking about ho -- tracking the infection and they did MRIs and everything. Do you recall?
12:55:11 **A.** Umm-hmm.
12:55:14 **Q.** "Yes"?
12:55:14 **A.** Yes.
12:55:15 **Q.** Okay.

12:55:28 (Discussion off the stenographic record.)
12:55:28 (Wenzel Exhibit 9 marked for identification.)
12:55:35 (Discussion off the stenographic record.)
12:55:35 BY MR. ASSAAD:
12:55:35 **Q.** Doctor, you've read this study; correct?
12:55:37 **A.** I have.
12:55:38 **Q.** And you relied upon this study; correct?
12:55:41 **A.** I did.
12:55:41 **Q.** Okay. Let's go to the "Discussion" section on page 3 of this study.
12:55:52 **A.** Okay.
12:55:54 **Q.** On the second paragraph under "Discussion" it says: "Because the main source of contamination in total joint replacement is wound infection via operating room air, we attempted to mimic perioperative contamination by inoculating the bacteria into the joint immediately after wound closure."
12:56:10 Did I read that correctly?
12:56:13 **A.** Yes. That's what they say.
12:56:13 **Q.** You disagree with that; don't you?
12:56:15 **A.** I do.
12:56:15 **Q.** Okay. So disagree with a study that you think is authoritative; correct?

12:56:18 **A.** Well the focus I had was on the infecting dose.
12:56:18 **Q.** Okay.
12:56:21 **A.** That's what I was trying to get at.
12:56:24 **Q.** Well this didn't really talk about infecting dose, this was more of, like, what occurs when the patien -- when the -- when the rabbit gets infected, and following the infection by doing MRI; correct?
12:56:32 MR. COREY GORDON: Object to the form of the question.
12:56:33 **A.** What --
12:56:34 **Q.** Correct; "yes" or "no"?
12:56:35 **A.** In other words, I'm trying to find any data that I could, at least in a brief survey, of what it takes to infect the joint, --
12:56:41 **Q.** Okay. So you like --
12:56:42 **A.** -- and this was one of the studies.
12:56:44 **Q.** So you like to take -- you like to take the data that supports your position --
12:56:46 **A.** No.
12:56:47 **Q.** -- and then disregard data that doesn't support your position; correct?
12:56:50 **A.** No, that's not true.
12:56:51 **Q.** So you think that --
12:56:52 **A.** I've already shown you studies where there

12:56:55 were data that I had, some clinical data, where it didn't support it, so you know that.
12:56:59 **Q.** But you disregard the -- the -- these authors here that did this study that said that the -- that -- that the main source of contamination in total joint replacement is wound infection via operating room.
12:57:12 You disregard that; correct?
12:57:13 **A.** I disagree with that. That had nothing related -- They didn't look at where the organisms came from here. They had them in the syringe and injected them.
12:57:22 **Q.** Okay. But that's why they injected them the way they did; correct?
12:57:26 MR. COREY GORDON: Object to the form of the question, also lack of foundation.
12:57:28 **Q.** I mean --
12:57:28 **A.** I don't know why they did what they did, but they do say that they -- they think it's airborne. I disagree with that.
12:57:34 **Q.** It says --
12:57:34 **A.** They injected animals, and that's the kind of dose that they used to get infection.
12:57:38 **Q.** "...we attempted to mimic perioperative contamination by inoculating the bacteria in the joint

13:22:53 **A.** I don't know.
13:22:54 **Q.** A millimeter?
13:22:55 **A.** I don't know. Never seen any data on that.
13:22:58 I'm not sure.
13:22:59 **Q.** You don't know how thick the skin is?
13:23:01 **A.** No. Don't know.
13:23:04 **Q.** Okay. You've never --
13:23:08 **A.** Don't remember looking at it.
13:23:09 **Q.** -- never done -- in medical school did -- on
13:23:12 a cadaver and cut through the skin?
13:23:15 **A.** I did -- I did do that, yeah.
13:23:15 **Q.** Okay.
13:23:16 **A.** Wasn't very far, but I don't know.
13:23:17 **Q.** I mean, are we talking two inches?
13:23:19 **A.** Probably not two inches. Less.
13:23:21 **Q.** An inch?
13:23:21 **A.** I don't know. I already --
13:23:21 **Q.** So you don't know?
13:23:22 **A.** -- told you I don't know.
13:23:24 **Q.** Okay. All right.
13:23:24 How far is it between the -- the sweat
13:23:34 gland, which I think is the lowest, and a knee joint?
13:23:41 **A.** I don't know.
13:23:42 **Q.** How far is it between a sweat gland --
13:23:44 Well you agree the sweat gland look likes

13:23:47 it's the lowest in this picture here?
13:23:49 **A.** Well in the picture it looks like it's at
13:23:51 the same level as the sebaceous glands roughly, so.
13:23:54 **Q.** Okay. Well let's just say whatever is
13:23:56 lowest, how far do you think the bacteria is that's on
13:23:59 a patient's skin or in the glands or -- from a knee
13:24:04 joint?
13:24:06 **A.** I don't know how -- what the distance is in
13:24:08 millimeters or not.
13:24:09 **Q.** Okay. Well you agree that there's no -- I
13:24:13 mean, if a person is not -- doesn't have sepsis or an
13:24:15 infection there's no bacteria in the fat; correct?
13:24:22 **A.** I think that's true.
13:24:23 **Q.** Okay. And --
13:24:24 **A.** No. No. Well in the fat, yeah. I think
13:24:27 that's true.
13:24:27 **Q.** And you agree with me there'd be no bacteria
13:24:29 in the muscle if a person doesn't have an infection.
13:24:29 **A.** Yes.
13:24:32 **Q.** Ongoing infection; correct?
13:24:33 **A.** If they don't have an infection?
13:24:33 **Q.** Ongoing infection, yeah.
13:24:33 **A.** Yes.
13:24:33 **Q.** Okay. And you agree with me that the --
13:24:37 (Interruption by the reporter.)

13:24:37 **Q.** And you agree with me that there's no
13:24:40 bacteria in the blood if the person doesn't have some
13:24:41 sort of blood infection.
13:24:42 **A.** By definition.
13:24:44 **Q.** Okay. Because in fact if someone had sepsis
13:24:47 or a blood infection it probably wouldn't be a good
13:24:50 time to do elective surgery; correct?
13:24:52 MR. COREY GORDON: Object --
13:24:52 **A.** To do what?
13:24:53 **Q.** Elective surgery.
13:24:54 MR. COREY GORDON: Object to the form of
13:24:55 the question, also lack of foundation.
13:24:56 **A.** I don't think I understand the question I
13:24:57 guess.
13:24:57 **Q.** Well if someone had an infection, an ongoing
13:24:59 infection, --
13:24:59 **A.** Oh.
13:25:00 **Q.** -- it wouldn't be -- it wouldn't be proper
13:25:01 to do --
13:25:01 **A.** Oh, I see.
13:25:04 **Q.** -- elective surgery.
13:25:04 **A.** I'm sorry. Didn't understand the que --
13:25:05 Yeah. I try to --
13:25:05 MR. COREY GORDON: Wait until he finishes.
13:25:07 THE REPORTER: Yes, please.

13:25:08 **A.** So to answer the question. One of the
13:25:11 things that you want to do for any surgery that's
13:25:15 elective is not to have any source of infection
13:25:18 anywhere.
13:25:27 **Q.** Okay. So you mentioned that there is the --
13:25:29 the chlorhex with alcohol and the io -- iophorm [ph]?
13:25:34 **A.** Iodophor.
13:25:36 **Q.** Iodophor with alcohol.
13:25:37 What percentage of the bacteria do those
13:25:39 prep solutions kill?
13:25:42 **A.** I don't think I know the answer to that, but
13:25:43 a high proportion.
13:25:44 **Q.** 99.9?
13:25:46 **A.** I don't know.
13:25:47 **Q.** You don't know?
13:25:48 **A.** Might be, but I don't know. I can't cite
13:25:51 any -- And if I answer you I want to try to cite the
13:25:54 reference, that's what I'm saying.
13:25:54 **Q.** Okay. So sitting here today, you don't
13:25:56 know.
13:25:56 **A.** No.
13:25:57 **Q.** Okay. And does it kill the bacteria that's
13:25:59 in the -- the subacaneous -- or the sebaceous gland?
13:26:06 **A.** No, it doesn't.
13:26:07 **Q.** Okay. What about the sweat glands?

13:36:10 **A.** Well I would say there's no study out there, but if you take skin, the -- what we're really talking about is controlling the microbiome. And if you said to me today, I've got to get a hip replacement, I would tell you chlorhexidine alcohol, just as Dr. Reed did in his study, after awhile.

13:37:35 **Q.** You would agree with me that if -- if a -- Strike that.

If the bacteria comes from the patient's skin -- Let's take out P. acnes, okay? We could agree that P. acnes is a very unlikely cause of a infection for a total hip or total knee arthroplasty; correct?

13:38:19 **A.** Yes.

13:38:19 **Q.** Okay. Let's just assume all my questions is excluding P. acnes when I talk about bacteria going forward. Correct? Do you understand that?

13:38:27 **A.** If you want to make an assumption, yes.

13:38:30 **Q.** Yes. How does the bacteria get from the skin to the periprosthetic joint to cause an infection during the operation? If you know.

13:38:55 **A.** Well I have to go back to P. acnes, because it's the only study that shows that it's already there at the time of the incision, so it -- it's there. The other study I'd point to would be Tammelin's study of CABGs and Staph epi where he tried to do

13:39:14 fingerprinting to say if I look at the air, if I look at the surgeons and if I culture the patient's legs where the graft is for the CABG, or if I culture the sternum, he could find the only match that -- with any high numbers in the sternum for Staph epi. These are heart studies, but it comes back to what I've said earlier. If you have an organism, a marker organism and you can follow it, so he's able to do a fingerprint on those Staph epi on the sternum. I think I --

13:39:47 **Q.** Well I'm asking --

I mean, my understanding is, and it's a very limited understanding, that bacteria either need to be transferred by direct contact or they can be aerosolized. They don't have legs; correct? They don't move.

13:39:59 **A.** They can move, on the surface.

13:40:00 **Q.** How do they move?

13:40:02 **A.** I don't know how they move, but, you know, they're -- if there -- if there is an incision made across a group of bacteria, then why would you not think that they're actually going to fall into the wound? That's a hypothesis that I have --

13:40:18 **Q.** Is there any evidence --

13:40:19 **A.** -- but nobody -- nobody knows exactly how

13:40:21 they get from the flora to the wound. And I've said that in my report.

13:40:28 **Q.** Okay. So you have no opinion of how the bacteria get from the flora, patient's flora into the wound; correct?

13:40:36 **A.** Not in detail. I just know that they're already present at the time of the incision.

13:40:41 **Q.** Now do they jump from the patient's skin right into the -- into the joint, or would they go through the fascia and the mu -- and the muscle?

13:40:51 **A.** I don't know.

13:40:52 **Q.** Okay.

13:40:52 MR. COREY GORDON: Wait for him to --

13:40:54 THE WITNESS: I'm sorry.

13:40:54 MR. COREY GORDON: You gotta wait for him to finish the question.

13:40:56 THE WITNESS: Yeah. Apologize.

13:40:57 **Q.** Okay. So --

13:40:58 And you're aware that in many total hip and total knee arthroplasties, if not all, that patients are given a prophylactic dose of antibiotics.

13:41:12 **A.** Patients are given antibiotics, yes, preoperatively, perioperatively.

13:41:17 **Q.** Perioperatively. Actually before even incision.

13:41:19 **A.** Yes.

13:41:20 **Q.** Okay. And in fact that has shown to reduce the incident of superficial wound infection for total hip and total knee arthroplasty; correct?

13:41:33 **A.** More than that. I mean, if I go back to Lidwell's study, he -- when he looked at the patients who had perioperative antibiotics, their deep-joint infection rate was four times greater in the group that didn't have antibiotics.

13:41:50 MR. COREY GORDON: You said "greater."

13:41:53 THE WITNESS: I'm sorry.

13:41:54 **A.** The people who didn't get perioperative antibiotics had a four times risk of the prosthetic joint infections compared to the ones who did.

13:42:05 **Q.** So we agree that perioperative antibiotics decreases the risk of periprosthetic joint infections?

13:42:09 **A.** Yes.

13:42:10 **Q.** Okay. You do agree with me that the bacteria has to get to the -- to the joint area to cause a periprosthetic joint infection perioperatively; correct?

13:43:30 **A.** Bacteria are necessary, not sufficient, yes.

13:43:33 **Q.** Okay. And when we say "get to the joint area," we're getting to the prosthesis during the total hip or total knee arthroplasty; correct?

14:15:53 that -- that that study would not be scientifically
14:15:57 valid today; correct?
14:16:00 MR. COREY GORDON: Object to the form of
14:16:00 the question and misstates the testimony.
14:16:01 **A.** I actually read the whole response that she
14:16:04 said, and then later on she was questioned. Did you
14:16:09 -- And she said, did I really say that? Because I --
14:16:13 You know, then she went on to say, I would need a
14:16:16 bigger study because, you know, so many things have
14:16:20 been done and everybody has to have a warmer. And the
14:16:22 second thing, she said it may not be two thirds, she
14:16:26 said 30 percent reduction is probably what I would see
14:16:29 today.
14:16:31 **Q.** In colo --
14:16:32 **A.** Still humongous, she said.
14:16:34 **Q.** Do you think there's a difference between
14:16:36 colorectal surgery and -- and a knee surgery?
14:16:38 MR. COREY GORDON: Object to the form of
14:16:40 the question.
14:16:40 **A.** Of course there's a difference, I mean. But
14:16:42 if you said does the skin react differently, you know,
14:16:47 or the microbiome, the body's physiology whether a
14:16:51 knife is on the abdomen or on a hip, I'm not sure.
14:16:55 **Q.** You think, sitting here today, that the
14:16:57 primary source of the bacteria in a colorectal surgery

14:17:02 which has a high incidence of infection, is the skin
14:17:05 and not the colon?
14:17:07 **A.** Well they had both, actually. When you look
14:17:09 at the organisms, if you found a Staph aureus, which
14:17:13 they certainly found, that was part of the finding.
14:17:16 That's not an organism commonly in the GI tract. Can
14:17:20 be. They also found enterococcus, they had one
14:17:24 candida. So they certainly had a mixture of what was
14:17:26 in the GI tract and what was on the skin. So if
14:17:29 that's what you're asking, yes.
14:17:30 **Q.** I mean you agree with me that colorectal
14:17:32 surgery has a high incidence of infection because it's
14:17:34 a -- whether it's a clean contaminated or a
14:17:37 contaminated surgery; correct?
14:17:38 **A.** That is correct.
14:17:39 **Q.** It's a much different surgery than a total
14:17:41 hip and total knee, --
14:17:42 **A.** It's --
14:17:42 **Q.** -- which is a clean surgery.
14:17:45 **A.** It's different from those operations, yeah.
14:17:47 But what I'm saying --
14:17:49 **Q.** Well that's all I -- that's all I need.
14:17:50 **A.** Okay.
14:17:51 **Q.** So, I mean, we agree that total hip and
14:17:53 total knee are considered clean surgeries.

14:17:55 **A.** Yes.
14:17:55 **Q.** Okay. With respect to the Leeming --
14:19:18 Leeming article that we just referenced, are you aware
14:19:21 that the biopsies of the skin were taken on the back?
14:19:24 **A.** No. I did -- you know, we -- this was a
14:19:27 very quick look and wanted to see the punch line.
14:19:30 **Q.** So you would agree with me that just assume
14:19:31 that I'm reading this correctly, that the samples were
14:19:34 taken on the back skin -- okay, the back -- the back
14:19:37 skin, that that doesn't indicate that there's data
14:19:40 that these types of bacteria are on the glands in the
14:19:45 knee or hip; correct?
14:19:47 **A.** If that's true, then that's what the study
14:19:50 would say.
14:19:50 **Q.** Okay.
14:19:51 **A.** I'm not questioning your...
14:19:54 **Q.** All right.
14:19:54 (Mr. Ben Gordon departed the proceedings.)
14:20:45 **Q.** And as an expert that's doing a literature
14:20:48 review, the best evidence to rely upon are going to be
14:20:54 peer-reviewed studies; correct?
14:20:56 MR. COREY GORDON: Object to the form of
14:20:58 the question.
14:20:58 **A.** In general I think that's better.
14:21:01 **Q.** Because there are many studies that are

14:21:03 performed, even internally at 3M, that they might just
14:21:07 be trying to determine which is the best way to study
14:21:12 and might try different types of techniques; correct?
14:21:17 **A.** Yeah, I don't know what 3M's doing in trying
14:21:17 to come up with techniques.
14:21:18 **Q.** But, for example, let's talk about, you
14:21:26 know, culturing glands, okay? Let's see what grows in
14:21:29 glands. There might be some techniques that work to
14:21:31 determine whether or not there's bacteria in the
14:21:33 glands, and there might be other techniques that might
14:21:35 not work; correct?
14:21:37 MR. COREY GORDON: Object to the form of
14:21:37 the question.
14:21:37 **A.** Hypothetically, yes.
14:21:39 **Q.** And as a scientist you're trying to
14:21:41 determine, you know, if you want to collect data,
14:21:44 which is the best way to collect data; correct?
14:21:49 **A.** I'd like to know the best way always.
14:21:51 **Q.** Okay. And sometimes you might try a method
14:21:54 that might not work; correct?
14:21:56 **A.** Happens all the time.
14:21:57 **Q.** Okay. Happens all the time.
14:21:59 And when you try a method that doesn't work,
14:22:01 do you publish that?
14:22:02 **A.** You might.

14:31:53 **A.** -- you're saying?
14:31:53 **Q.** -- about -- not the studies, I'm talking about what Dr. Wenzel's opinion is.
14:31:59 **A.** Yeah.
14:31:59 **Q.** Okay. Based on what whatever you've read.
14:32:02 **A.** Yeah.
14:32:02 **Q.** Okay. I don't want to know the studies, I know what the studies are. Because I know some of them you agree with and some of them you don't agree with; correct?
14:32:11 **A.** That's right.
14:32:11 **Q.** Okay. So I want to know what your opinion is, not what the studies' opinion is.
14:32:13 **A.** Umm-hmm.
14:32:15 **Q.** Fair enough?
14:32:15 **A.** Yeah.
14:32:16 **Q.** Okay. Does Dr. Wenzel agree, you, that the number of bacteria arriving in the surgical wound correlate directly with the probability of a surgical-site infection?
14:32:28 **A.** I can't answer that for all studies, there is a disparity of that. But my opinion is that it's not been linked to surgical-site infections. Particles and bacteria have been linked, but not necessarily that link of CFUs and infection.

14:32:46 **Q.** I wasn't talking about particles.
14:32:48 Listen to the question.
14:32:49 **A.** Yeah. Go ahead.
14:32:50 **Q.** Do the numbers of bacteria arriving in the surgical wound correlate directly with the probability of surgical-site infection; "yes" or "no"?
14:33:01 **A.** Well Birgand would say no, he can't find a correlation with contamination of the wound.
14:33:09 **Q.** What about Dr. Wenzel?
14:33:11 **A.** I don't know.
14:33:12 **Q.** Okay. You don't know.
14:33:12 **A.** I mean, I'm not sure.
14:33:13 **Q.** Okay. What about this question: Do the number of bacteria in the operating room environment correlate directly with the probability of SSI, "yes" or "no," according to Dr. Wenzel?
14:33:25 MR. COREY GORDON: Object to the form of the question, incomplete hypothetical. It's not a yes-or-no question.
14:33:33 **Q.** "Yes" or "no"?
14:33:34 **A.** So the total number of bacteria in the air?
14:33:36 **Q.** I'll read it again.
14:33:37 **A.** Yeah.
14:33:38 **Q.** Do numbers of bacteria in the operating room environment correlate directly with the probability of

14:33:46 surgical-site infections?
14:33:47 **A.** I haven't seen that, no.
14:33:48 **Q.** So you disagree --
14:33:48 **A.** I don't know.
14:33:49 **Q.** -- with that.
14:33:50 **A.** I don't know.
14:33:51 **Q.** You don't know. Okay.
14:33:52 You don't have an opinion whether or not OR traffic increases the risk of surgical-site infection; is that correct?
14:34:40 **A.** I think in general OR traffic's been linked to increasing particles. It's hard to know whether those increased surgical-site infections, but I think there are some studies. I'm having trouble remembering which ones show that it might, but it might be important. But then there is some contradictory evidence and I was just, in my report, trying to show that.
14:35:02 **Q.** Well just so I understand, at trial you're not going to have an opinion that OR traffic caused a surgical-site infection.
14:35:15 MR. COREY GORDON: Object to the form of the question.
14:35:20 **A.** At this point I don't know. Yeah.
14:35:23 **Q.** Well I --

14:35:24 **A.** Yeah.
14:35:24 **Q.** -- here's the thing, doctor, and I'm not trying to be difficult. I know the studies as well as you do.
14:35:29 **A.** Yeah.
14:35:30 **Q.** Okay. And -- Not as well, but I know them fairly well. You probably know them better.
14:35:35 I'm not -- I could read the studies as well. I want to know based on your reading of the studies what Dr. Wenzel's opinion is, okay? Not what the literature says, but what your opinion is. You could support it with the literature, but at this point in time I've read your report, I know what literature you're relying upon.
14:35:50 I just want to know, okay, do you think that OR traffic increases the risk of surgical-site infections in a total hip or total knee arthroplasty?
14:36:06 **A.** It might, yes.
14:36:07 **Q.** It might --
14:36:07 **A.** Yeah.
14:36:07 **Q.** -- or it does?
14:36:08 **A.** I don't know. It might.
14:36:09 **Q.** Can you say that within a reasonable degree --
14:36:11 **A.** Yeah.

15:18:54 that thing comes down.
15:18:56 (Laughter.)
15:18:56 BY MR. ASSAAD:
15:19:30 **Q.** Are you aware of articles that discuss that
15:19:32 the incidence of periprosthetic joint infections are
15:19:34 going to increase over the next twenty -- up to 2030?
15:19:39 MR. COREY GORDON: Object to the form of
15:19:40 the question.
15:19:40 **A.** Yeah, related to the increased number of
15:19:41 people who are undergoing the procedures, so.
15:19:44 **Q.** When we talk about incidence, I'm talking
15:19:46 about the percentage.
15:19:48 **A.** Percent?
15:19:48 **Q.** Do you recall an article that indicated by
15:19:51 2030 the -- the incident of periprosthetic joint
15:19:57 infections will be as high as 6 percent?
15:19:59 **A.** I'm not aware of that at all.
15:20:42 **Q.** You would agree with me that being diabetic
15:20:47 is not a cause of the infection.
15:20:51 MR. COREY GORDON: Object to the form of
15:20:52 the question.
15:20:53 **A.** I don't agree with that at all. My view of
15:20:56 infections, surgical-site infections is that they're
15:21:01 multifactorial and the comorbidities, for example, are
15:21:05 a -- one factor that can certainly change the baseline

15:21:10 rate if you're not having those comorbidities. So I
15:21:14 look at all the risk factors as, if you will, risk
15:21:20 factors and causes. So if you said to me, I have
15:21:23 twins, one of them is -- you know, exactly the same
15:21:28 genetics, same surgeon, same operation, everything the
15:21:31 same except one's an obese diabetic, and that patient
15:21:36 gets an infection post-op, of course the diabetes and
15:21:41 the obesity contributed to that person's increased
15:21:44 risk of infection.
15:21:47 **Q.** Doesn't that go to susceptibility?
15:21:54 **A.** What I know it goes to is -- at least in
15:21:58 terms of diabetes and obesity, is a change in the
15:22:02 microbiome. Is that what you mean by
15:22:05 "susceptibility"?
15:22:05 **Q.** So you think in that -- And -- Okay.
15:22:10 I want to make sure I understand you. You
15:22:12 think obesity and diabetes has an effect on the human
15:22:15 microbiome.
15:22:15 **A.** It does, and I've cite -- several studies
15:22:18 that I've cited.
15:22:19 **Q.** Okay. And therefore what type of effect;
15:22:25 does it increase the -- the number of bacteria on the
15:22:29 skin?
15:22:29 MR. COREY GORDON: Object to the form of
15:22:30 the question.

15:22:30 **A.** Increases for sure the number of people who
15:22:33 are nasal carriers of Staph aureus, and by definition
15:22:39 those people are more susceptible to infections.
15:22:41 There may be other things as well, but that's -- the
15:22:43 study of the microbiome is pretty young still, but
15:22:46 it's a remarkable thing that we have several studies
15:22:49 showing that.
15:22:49 **Q.** But you still -- you agree with me that the
15:22:51 fact that --
15:22:54 You still need the bacteria to cause the
15:22:56 infection; correct?
15:22:58 **A.** Bacteria are necessary, not sufficient.
15:23:02 **Q.** You can't have an infection without the
15:23:03 bacteria; correct?
15:23:04 **A.** That's true.
15:23:05 **Q.** Okay. And you are just saying that a person
15:23:09 that is obese might be more likely to be a Staph
15:23:15 aureus carrier or an MRS carrier.
15:23:18 **A.** That's for sure, and I know that person's at
15:23:20 higher risk when you look at the epidemiologic
15:23:24 studies, which I've cited, for getting a surgical-site
15:23:27 infection.
15:23:28 **Q.** I understand that.
15:23:28 But my point is that makes them more
15:23:33 susceptible, not that -- I mean --

15:23:36 The only thing I know that causes a
15:23:38 periprosthetic joint infection is a bacteria; correct?
15:23:40 **A.** That's always there.
15:23:41 **Q.** Okay. The fact that I am -- someone's obese
15:23:44 is not going to spontaneously have an infection
15:23:47 without a bacteria; correct?
15:23:49 **A.** Correct.
15:23:49 **Q.** Okay. It is the bacteria that causes the
15:23:53 infection, and it is the host that may be susceptible
15:23:58 more or less than the average human and may allow the
15:24:06 infection to progress.
15:24:07 MR. COREY GORDON: Object to the form of
15:24:08 the question.
15:24:08 **A.** You and I are going to disagree. I mean, I
15:24:11 think that risk factors are, by definition, causal,
15:24:15 and -- that's why I tried to give you the twins, one
15:24:20 was a diabetic obese, and without that that person,
15:24:24 the twin, didn't get an infection. You're asking a
15:24:27 little bit about mechanisms, which aren't fully worked
15:24:30 out.
15:24:31 **Q.** Well the one that's diabetic obese compared
15:24:33 to the regular twin, okay, the diabetic obese still
15:24:51 would have to have a bacteria that would get into the
15:24:53 joint area during the operation to cause an infection;
15:24:55 correct?

15:24:56 **A.** Yeah. I mean --
15:24:57 **Q.** And the same thing with a person that's
15:24:59 skinny; correct?
15:25:00 **A.** That's correct.
15:25:00 **Q.** Unless, let's assume it's the same amount of
15:25:03 bacteria, say it's a thousand CFUs or 10,000 CFUs,
15:25:08 okay? My understanding, and see if we could agree,
15:25:10 that the diabetic obese patient is more prone to --
15:25:14 for the -- for the CFUs to -- to -- like -- more
15:25:20 likely to become infected because that person is obese
15:25:23 and a diabetic as compared to the healthy person.
15:25:28 MR. COREY GORDON: Object to the form.
15:25:30 **Q.** Do you understand what I'm saying?
15:25:31 **A.** Not really, no.
15:25:36 **Q.** Okay. You still need the bacteria to land
15:25:37 on the -- the diabetic and obese person; correct?
15:25:42 **A.** Correct.
15:25:42 **Q.** If no bacteria lands on the joint during the
15:25:44 operation of a diabetic obese patient, that patient,
15:25:49 more likely than not, is not going to have an
15:25:50 infection; correct?
15:25:51 **A.** Yes.
15:25:51 MR. COREY GORDON: Object to the form of
15:25:52 the question.
15:25:53 **Q.** Correct?

15:25:54 **A.** Yes.
15:25:54 **Q.** And in fact it would be impossible, without
15:25:56 bacteria, for that person to have an infection;
15:25:58 correct?
15:25:58 **A.** Need the bacteria.
15:25:59 **Q.** Huh?
15:26:00 **A.** Need the bacteria.
15:26:01 **Q.** You need the bacteria.
15:26:02 Whether or not you are obese, diabetic,
15:26:05 immunosuppressed and whatever type of comorbidity
15:26:10 there is, you need the bacteria.
15:26:11 **A.** Yes.
15:26:12 **Q.** Okay. You could be immunosuppressed and go
15:26:29 through a total hip and total knee arthroplasty, and
15:26:32 as long as no bacteria lands in the joint area you're
15:26:34 not going to get an infection; correct?
15:26:36 **A.** I think that's true.
15:26:38 **Q.** Same thing with a diabetic; correct?
15:26:40 **A.** Yes.
15:26:41 **Q.** Same thing with an obese person; correct?
15:26:42 **A.** Yes.
15:26:43 **Q.** Okay. You need the bacteria to get to the
15:26:45 joint; correct?
15:26:46 **A.** You do.
15:26:47 **Q.** Okay. Go to page 13.

15:27:25 **A.** Sure.
15:27:45 **Q.** On the third paragraph from the bottom where
15:27:47 it says: "Thus, substantial rises in comorbidities"?
15:27:51 Do you see that?
15:27:52 **A.** I do.
15:27:53 **Q.** Okay. The last sentence you say, "...it has
15:27:56 been reported that surgical site infection rates have
15:27:58 fallen over time during the use of Bair Hugger."
15:28:00 Correct? I read that correctly?
15:28:01 **A.** Yeah.
15:28:02 **Q.** You're talking about superficial wound
15:28:04 infections; correct?
15:28:05 **A.** They're probably mixed.
15:28:07 **Q.** Well we just said there was no study on
15:28:09 periprosthetic joint infections.
15:28:10 MR. COREY GORDON: Object to the form of
15:28:12 the question.
15:28:14 **A.** Yeah. I don't know that they didn't count
15:28:21 -- I mean CDC has rates for hips and --
15:28:21 (Interruption by the reporter.)
15:28:25 **A.** -- has rates of infection for total hip
15:28:28 placement, total knee replacement from their national
15:28:31 cohort. And what I cited in the report was if you
15:28:35 look at the trends over time, and they corrected for
15:28:39 some of the comorbidities the best they could, they've

15:28:42 actually shown a decline, something like 27 to 43
15:28:45 percent depending on one's hips, one's knees.
15:28:49 **Q.** Are you aware of the -- the Parvizi studies
15:28:53 regarding the economic burden of periprosthetic joint
15:28:55 infections?
15:28:56 **A.** I think so. I don't remember exactly what
15:28:57 number he came up with, but.
15:29:01 **Q.** Well you know that Dr. Parvizi has looked at
15:29:04 this issue; correct?
15:29:05 **A.** Yeah.
15:29:05 MR. COREY GORDON: Object to the form of
15:29:07 the question.
15:29:07 MR. ASSAAD: Basis?
15:29:08 MR. COREY GORDON: What is "this issue"?
15:29:10 You've just -- You've had a whole line of questions
15:29:12 where you're asking him about the trends, and then
15:29:13 you switch gears and then you say he's -- Parvizi has
15:29:18 looked at "this issue."
15:29:21 BY MR. ASSAAD:
15:29:25 **Q.** Doctor, you knew what I was talking about
15:29:27 when I said "this issue"; correct?
15:29:29 **A.** I did.
15:29:29 MR. COREY GORDON: Object to the form of
15:29:30 the question, lack of foundation.
15:29:31 **Q.** We were talking about infection rates;

15:47:59 And it's underlined by Dr. Oguz; is that
15:48:02 correct?
15:48:04 **A.** Underlined by me?
15:48:05 **Q.** Yes.
15:48:05 **A.** Yeah.
15:48:06 **Q.** Okay. Can I have that back, please?
15:48:07 **A.** Sure. (Handing.)
15:48:08 **Q.** Now what you didn't underline here was the
15:48:13 statement by the authors that, this study may
15:48:16 obviously not be generalized for an overall safety
15:48:19 statement on forced-air warming, and is primarily
15:48:23 applicable in the particular surgical setup.
15:48:26 You didn't underline that; did you?
15:48:27 **A.** No.
15:48:28 **Q.** Okay. That's a pretty important statement
15:48:30 by the authors; isn't it?
15:48:31 MR. COREY GORDON: Object to the form of
15:48:32 the question, lack of foundation.
15:48:34 **A.** Where am I looking here?
15:48:38 **Q.** (Indicating.) Right after you stopped
15:48:40 underlining up here.
15:48:41 **A.** Right there? (Witness reviewing exhibit.)
15:48:49 So you're saying "only the maximum number of health
15:48:52 professionals" --
15:48:53 **Q.** No. Over here, sir. Right after this

15:48:55 underline here. [Indicating.]
15:48:56 **A.** Oh, this one. Okay. (Witness reviewing
15:49:05 exhibit.)
15:49:05 It might not. So I think that -- I think
15:49:11 good authors will try to look and give their own
15:49:14 critique of potential shortcomings.
15:49:17 **Q.** Okay. Now let's look at the table
15:49:19 underneath there that looked at the multivariate
15:49:23 analysis.
15:49:25 Do you agree with me for four out of the six
15:49:29 plates that there is a higher incident of bacteria
15:49:34 when forced-air warming was used as compared to when
15:49:37 forced-air warming was not used, or when the HotDog
15:49:39 was used?
15:49:42 **A.** Where is this?
15:49:43 **Q.** Table 2.
15:49:44 **A.** Oh, I'm sorry. It's these?
15:49:45 **Q.** Yeah. The second line down.
15:49:47 **A.** Okay. (Witness reviewing exhibit.) So what
15:50:07 are you -- Make sure that I know what you're looking
15:50:09 -- what numbers.
15:50:10 **Q.** Let me read it out loud for you.
15:50:11 **A.** Yeah. Go ahead.
15:50:12 **Q.** Table 2 is the results of a multivariate
15:50:15 analysis of factors; correct?

15:50:16 **A.** Yeah. Yeah.
15:50:16 **Q.** And that's what you were talking about;
15:50:17 correct?
15:50:18 **A.** I am.
15:50:18 **Q.** And it looked at the presence of forced-air
15:50:21 warming; right? On plate 1 it was 1.13; on plate 2 it
15:50:26 was 1.07, and you even highlighted it in blue; plate 3
15:50:30 is 1.30; plate 4 is 1.55; and plate 5 and 6 are 1.0.
15:50:36 Is that correct?
15:50:37 **A.** Let me look. In the "absence of laminar
15:50:43 flow," you're looking at that, or the "presence of
15:50:44 forced air warming"?
15:50:45 **Q.** "Presence of forced air warming."
15:50:46 **A.** Yeah, that's correct.
15:50:47 **Q.** So with the presence of forced-air warming
15:50:49 there was an increase in bacterial load over the
15:50:52 surgical site.
15:50:53 MR. COREY GORDON: Object to the form of
15:50:54 the question.
15:50:54 **Q.** That's what those numbers mean; correct?
15:50:57 For four out of the six plates.
15:50:59 **A.** Oh, I see what you're saying. Yes.
15:51:00 **Q.** Okay.
15:51:01 **A.** For four out of the six, yeah.
15:51:03 **Q.** Okay. And you are aware that the -- only

15:51:47 one surgery dealt with total knee replacement.
15:51:50 **A.** I think that's right.
15:51:51 **Q.** Okay. Most of them were short surgeries;
15:51:54 correct?
15:51:54 **A.** Yes.
15:51:55 MR. COREY GORDON: Object to the form of
15:51:55 the question.
15:52:13 **Q.** Let's move on to page --
15:52:55 Go to page 34 [Exhibit 1].
15:53:20 (Discussion off the stenographic record.)
15:53:20 MR. ASSAAD: Let's take a break then.
15:53:23 (Recess taken from 3:53 to 4:02 p.m.)
16:02:55 BY MR. ASSAAD:
16:03:03 **Q.** Ready to continue, doctor?
16:03:04 **A.** Sure.
16:03:07 **Q.** Now let's look at page 34.
16:03:11 **A.** Okay.
16:03:12 **Q.** You go over three studies that talk about
16:03:14 the nasal colonization of Staph aureus?
16:03:27 **A.** Yeah.
16:03:28 **Q.** You agree with me that none of those studies
16:03:30 looked at the incidence of periprosthetic joint
16:03:34 infection; correct?
16:03:37 **A.** Let me see where I am here. (Witness
16:03:47 reviewing exhibit.) You're sure Kalmeijer? I just

16:03:51 can't remember exactly.
16:03:52 Do you have that paper, just remind me.
16:04:11 **Q.** I do have Kalmeijer, I only have one copy.
16:04:13 You don't have it with you?
16:04:14 **A.** No. I don't have anything.
16:04:16 **Q.** Okay. Well actually, let's look --
16:04:21 MR. COREY GORDON: He might in the box, if
16:04:23 not what's up there.
16:04:23 **A.** Yeah, I don't know.
16:04:25 **Q.** Let's look at Kalmeijer, which is the
16:04:26 surgical site in -- you can use my copy --
16:04:28 surgical-site infections in orthopedic surgeries.
16:04:31 Is that the paper you're referring to?
16:04:32 **A.** Yeah.
16:04:33 **Q.** Okay.
16:04:33 **A.** Is it -- If it's not joints, I just wanted
16:04:37 to make sure. I thought it included --
16:04:39 **Q.** Actually, if you look at the page that looks
16:04:41 at the number of patients, --
16:04:42 **A.** Yeah?
16:04:44 **Q.** -- you can see that in -- when mupirocin is
16:04:49 used --
16:04:50 **A.** Mupirocin, right.
16:04:51 **Q.** -- there were zero infections; correct?
16:04:54 **A.** Yeah.

16:04:54 **Q.** And then when the placebo is used there was
16:04:57 only one infection; correct?
16:04:58 **A.** Yes.
16:04:59 **Q.** That's not --
16:05:00 **A.** Deep infection.
16:05:01 **Q.** Yeah. And we're talking about deep
16:05:02 infections; correct?
16:05:03 **A.** Yes.
16:05:03 **Q.** That's not statistically significant; is it?
16:05:05 **A.** I don't think so.
16:05:06 **Q.** Okay. So would it be fair to say that if
16:05:10 you used --
16:05:12 Is it mupirocin?
16:05:13 **A.** Mupirocin, yeah.
16:05:14 **Q.** -- mupirocin, that there is no data that
16:05:16 indicates that it would statistically impact deep
16:05:21 joint infections?
16:05:21 **A.** In that study.
16:05:22 **Q.** In that study, okay.
16:05:24 And you consider this study authoritative;
16:05:26 correct?
16:05:26 **A.** Yes.
16:05:27 **Q.** Okay. What about the other studies? Do you
16:05:30 agree with me that none of them found that nasal --
16:05:39 nasal colonization of Staph -- of Staphylococcus had

16:05:44 any effect on periprosthetic joint infection?
16:05:48 **A.** Well I showed you the data from Chen, and in
16:05:53 the articles I even had the graph, I think, related to
16:05:55 that.
16:05:55 **Q.** I'm talking about page --
16:05:56 **A.** They were mixed --
16:05:57 **Q.** Okay.
16:05:58 **A.** -- deep and superficial, but they were
16:06:01 prosthetic joints.
16:06:02 **Q.** Those were the types of surgeries; correct?
16:06:05 **A.** Yeah. Is that what you want?
16:06:06 **Q.** No. But the difference is whether or not it
16:06:08 caused a superficial wound infection or a
16:06:10 periprosthetic joint infection. And there's no data
16:06:13 that having colonization of Staph in your nose has an
16:06:20 effect on periprosthetic joint infection; correct?
16:06:24 **A.** Yeah, I -- Again, Chen. Let's look at that,
16:06:27 because I thought --
16:06:29 Where do I have that in my notes? He has --
16:06:32 **Q.** What page are you referring to?
16:06:33 **A.** Well I'm trying to find it. Maybe it was
16:06:42 earlier. (Witness reviewing exhibit.) Sorry I'm
16:07:10 taking so long.
16:07:16 **Q.** Why don't you look at page 65?
16:07:19 **A.** 65?

16:07:20 **Q.** You talk about Chen, et al, Clinical
16:07:22 Orthopedic?
16:07:23 **A.** Yeah.
16:07:23 **Q.** Yeah. Page 65.
16:07:28 **A.** No, that's not right; is it?
16:07:32 **Q.** I'm sorry. Sixty-four.
16:07:34 **A.** Yeah, that's right. Okay. Thank you.
16:07:38 So, let's see. (Witness reviewing exhibit.)
16:07:46 What I remember that the study said is they mixed
16:07:55 superficial and deep in their review of the literature
16:08:00 because it wasn't always clear. So it might be a mix
16:08:04 of some of these.
16:08:06 **Q.** So sitting here today there is no evidence
16:08:09 or data that indicates having colonization of Staph in
16:08:14 your nose significantly increases the risk of
16:08:17 periprosthetic joint infection; correct?
16:08:18 MR. COREY GORDON: Object to the question,
16:08:19 mischaracterizes his testimony.
16:08:20 **A.** Well what I said is there's a mix of -- of
16:08:24 periprosthetic joint infections and the more
16:08:27 superficial ones in here, and I can't tell you, you
16:08:30 know, what proportion.
16:08:31 **Q.** Okay. So you have no opinion. You can't
16:08:33 make the statement today --
16:08:34 **A.** Oh, I make an opinion, yeah. I mean I would

16:13:59 every study that looked at whether or not the Bair
16:14:02 Hugger increased particles or hydrogen bubbles over
16:14:06 the -- Sorry. Strike that.
16:14:09 Are you aware that Bair -- 3M admits that
16:14:13 every study indicates that whether you looked at
16:14:18 hydrogen or particles, that both were increased when
16:14:22 the Bair Hugger was turned on as compared to the Bair
16:14:24 Hugger was turned off?
16:14:25 MR. COREY GORDON: Object to the form of
16:14:26 the question, misstates the evidence.
16:14:27 **A.** So I'm not aware that 3M admitted that. No,
16:14:30 I'm not aware of that.
16:14:33 **Q.** If that is the case, would that cause you
16:14:35 any concern that the Bair Hugger increases particles
16:14:38 over the surgical site?
16:14:40 **A.** What I know now it would cause me no concern
16:14:43 because all the studies that get closer, looking at
16:14:46 CFUs, can't show that.
16:14:50 **Q.** Well are you aware of the Stocks article
16:14:52 that did a correlation between CFUs greater than 10
16:14:56 microns and --
16:14:56 **A.** Yes.
16:14:57 **Q.** -- and --
16:14:58 **A.** I'm sorry.
16:14:59 **Q.** -- and CFUs?

16:15:00 **A.** Yes.
16:15:01 **Q.** Do you agree with that study?
16:15:02 **A.** Yes.
16:15:03 **Q.** Okay. Page 46.
16:16:44 I just want to understand your CDC NNIS
16:16:47 score.
16:16:48 **A.** Yeah.
16:16:49 **Q.** And I guess you look -- to determine the
16:16:52 risk factor for a surgical site risk, one of the
16:16:55 things you can look at is an NNIS score; correct?
16:17:00 **A.** Yes.
16:17:00 **Q.** Okay. And when you talk about the
16:17:01 surgical-site infection risk, do you know whether or
16:17:04 not the CDC is referring to a superficial wound
16:17:06 infection or a periprosthetic joint infection?
16:17:08 **A.** I don't know for sure.
16:17:11 **Q.** Well that would be --
16:17:12 Since we're talking about, in this case,
16:17:14 periprosthetic joint infections, that would be
16:17:15 relevant; correct?
16:17:16 **A.** Yeah.
16:17:17 **Q.** Okay. Now if you look at the criteria --
16:17:25 Well what's your understanding of the length
16:17:27 of time of a -- a -- and I might have asked you
16:17:29 this -- a length of time for a total hip or total

16:17:32 knee?
16:17:33 **A.** I think they're around two hours.
16:17:35 **Q.** Okay. So you agree with me that most likely
16:17:39 the last criteria you offer one point for if op time
16:17:39 exceeds the seventieth percentile for that procedure,
16:17:49 or greater than three hours for a joint --
16:17:49 (Interruption by the reporter.)
16:17:49 **Q.** -- if op time exceeds the 75th percentile
16:17:53 for that procedure, or greater than three hours for
16:17:55 the joint replacement, that we could probably
16:17:58 eliminate greater than three hours as one of the
16:18:01 criteria that would be -- apply to total hip and total
16:18:04 knee.
16:18:04 MR. COREY GORDON: Object to the form of
16:18:04 the question, --
16:18:04 **A.** These --
16:18:05 MR. COREY GORDON: -- lack of foundation.
16:18:05 **A.** These are not my criteria, these are, you
16:18:08 know, CDC's, and I don't think today there would be
16:18:10 that many patients who would have more than three
16:18:13 hours.
16:18:14 **Q.** Okay. And we could agree that for total hip
16:18:16 and total knee it's not a contaminated or dirty
16:18:19 surgery; correct?
16:18:20 **A.** Yes. It's a clean surgery.

16:18:22 **Q.** Okay. And the ASA score is based on the
16:18:27 patient; correct?
16:18:28 **A.** It is.
16:18:30 **Q.** Okay. Now where it says, "if op time
16:18:32 exceeds the 75th percentile for that procedure," is
16:18:36 there somewhere I could look at to see what the -- the
16:18:39 time for each type of procedure is?
16:18:41 **A.** I think there is, but I -- I don't know the
16:18:45 CDC reference for that, though.
16:18:47 **Q.** Okay. Looking at the bottom, the odds ratio
16:19:11 of the variables.
16:19:12 **A.** Yeah.
16:19:13 **Q.** Why is it if you have private insurance
16:19:15 you're less likely to get a surgical-site infection?
16:19:19 **A.** My guess is that it's a surrogate for
16:19:23 healthier people who are less likely to have some of
16:19:26 the other comorbidities. I don't know the answer, but
16:19:28 that's my thought.
16:20:01 **Q.** Go to page 49.
16:20:04 **A.** Okay.
16:20:05 **Q.** You write: "Of interest, there were no
16:20:08 prosthetic joint infections...among diabetics who were
16:20:12 not obese..."
16:20:14 Did I read that correctly?
16:20:16 **A.** You did.

17:12:52 McGovern, and I would go through the McGovern study as
17:12:58 critically as I did regardless of what assumption.
17:13:03 **Q.** Well you agree with me that -- Strike that.
17:13:09 You're aware of the Legg studies; correct?
17:13:13 **A.** Yeah.
17:13:14 **Q.** The particle and the neutrally buoyant
17:13:17 helium bubbles; correct?
17:13:18 **A.** Yeah, yeah.
17:13:19 **Q.** And that shows that when the Bair Hugger is
17:13:21 turned on particles and helium bubbles increase over
17:13:23 the surgical site; correct?
17:13:26 **A.** Yeah.
17:13:26 **Q.** Okay. And you're aware of the McGovern
17:13:29 study also did a neutrally buoyant bubble test;
17:13:32 correct?
17:13:32 **A.** Yes, I think that's right.
17:13:33 **Q.** Okay. And you're aware of the Sessler
17:13:36 study, and if you looked at the raw data it would show
17:13:37 an increase in particles.
17:13:39 MR. COREY GORDON: Object to the form of
17:13:41 the question, mischaracterizes the evidence.
17:13:44 **A.** So bubbles and particles --
17:13:44 (Interruption by the reporter.)
17:13:44 **Q.** Okay. Bubbles and particles?
17:13:44 **A.** Bubbles and particles are surrogate markers

17:13:50 for the real infection, and there were times when the
17:13:53 Bair Hugger was on where the particles went up, the
17:13:56 heat went up, the bubbles went up, yes.
17:13:59 **Q.** Okay. So assuming that airborne
17:14:05 contamination is -- Strike that.
17:14:05 Assuming that with all these studies
17:14:08 regarding increased particles, increased bubbles,
17:14:11 okay, take into consideration Stocks' particle study
17:14:15 and Darouiche's CFU study and periprosthetic joint
17:14:20 infections, and assume that periprosthetic joint
17:14:27 infections are caused by airborne contamination.
17:14:30 Would that affect your opinions in this case of
17:14:33 whether or not the Bair Hugger increases
17:14:34 periprosthetic joint infections?
17:14:35 MR. COREY GORDON: Object to the form of
17:14:36 the question, incomplete hypothetical, assumes facts
17:14:38 not in evidence.
17:14:39 **A.** It's very hypothetical, and as I've told
17:14:43 you, probably not because I would look at the McGovern
17:14:45 study as the key clinical study that you're pointing
17:14:49 to for the efficacy, or for the -- saying what you did
17:14:54 about the Bair Hugger.
17:14:56 **Q.** So if the -- if -- if the Bair Hugger...
17:15:01 Let's make it even simpler.
17:15:03 **A.** Yeah.

17:15:07 **Q.** Still the same assumption that
17:15:09 periprosthetic infections are caused by airborne
17:15:11 contamination.
17:15:12 **A.** Yeah.
17:15:12 **Q.** Okay. If the Bair Hugger increases the
17:15:15 bacterial load over the surgical site, would that
17:15:20 affect your opinion of whether or not the Bair Hugger
17:15:22 increases periprosthetic joint infections?
17:15:25 **A.** Only if I could link the CFUs to infections
17:15:30 in a straightforward way.
17:15:33 **Q.** Similar to what Darouiche did but a much
17:15:34 bigger study.
17:15:35 **A.** Much bigger.
17:15:36 **Q.** Okay. So if you could link CFUs to
17:15:41 infections and the Bair Hugger increased the CFUs over
17:15:44 the surgical site, that would affect your opinions of
17:15:47 whether or not the Bair Hugger increased the risk of
17:15:49 periprosthetic joint infections.
17:15:51 **A.** Well in this hypothetical I'd want to know
17:15:52 whether the -- whatever the assumptions were,
17:15:56 including a hundred percent of infections from the
17:15:58 air, does the Bair Hugger actually increase
17:16:01 infections.
17:16:01 **Q.** Well assume --
17:16:01 **A.** That's the key question, not bubbles or

17:16:05 particles.
17:16:06 **Q.** So are you dismissing Darouiche's article?
17:16:08 **A.** No.
17:16:08 **Q.** Okay.
17:16:09 **A.** I'd say that he said there is no causal
17:16:12 relationship that he can identify here. You need a
17:16:15 much bigger study.
17:16:17 **Q.** That's --
17:16:19 You think he said there was no causal
17:16:19 relationship?
17:16:20 **A.** I thought he -- he said that this isn't
17:16:23 definite cause-and-effect. If I'm wrong, let me see
17:16:26 it.
17:16:35 **Q.** But just so I understand, my hypothetical is
17:16:39 inaccurate because it's your opinion that 90 percent
17:16:44 of these periprosthetic joint infections are caused by
17:16:48 the patient's flora.
17:16:49 **A.** Could be.
17:16:49 MR. COREY GORDON: Object to the form of
17:16:52 the question, mischaracterizes his testimony.
17:16:54 **A.** I mean I -- I think we disagree. You know,
17:16:57 I think that if you ask me where the origin of the
17:16:59 infections are, I think it's the microbiome in a high
17:17:05 proportion of patients. It could be as high as 90.
17:17:08 **Q.** Okay. Could it be as low as 10 percent?

17:27:50 orthopedic surgeries.
17:27:52 **A.** I haven't seen that. But what it show -- if
17:27:55 you're talking about particles or stuff like that?
17:27:58 **Q.** I'm talking about efficacy of warming
17:28:00 patients.
17:28:00 **A.** No. There -- I don't think there are any
17:28:02 data.
17:28:26 **Q.** Now is it my understanding that you would
17:28:29 need a clinical study to -- Strike that.
17:28:36 If a device contaminates the sterile field,
17:28:43 you would need a clinical study to show that it caused
17:28:45 harm?
17:28:46 MR. COREY GORDON: Object to the form of
17:28:48 the question, incomplete hypothetical.
17:28:52 **A.** I would say that would be a signal that
17:28:56 would lead to a study that we would see whether or not
17:29:00 that signal with, let's say, particles equate to
17:29:05 infection, and that's what I would want to have.
17:29:30 **Q.** All right. You're a member of the
17:29:41 International Society For Infectious Disease; correct?
17:29:43 **A.** That's true.
17:29:44 **Q.** Are you still a member?
17:29:45 **A.** Yeah. You're a kind of a member forever.
17:29:47 **Q.** Okay.
17:29:47 (Wenzel Exhibit 13 marked for

17:29:47 identification.)
17:29:47 BY MR. ASSAAD:
17:30:01 **Q.** Do you recognize this document?
17:30:03 **A.** I do.
17:30:04 **Q.** It's titled, "A Guide to Infection Control
17:30:06 in the Hospital, Fourth Edition"; correct?
17:30:09 **A.** Yes.
17:30:09 **Q.** And you're the editor; correct?
17:30:11 **A.** Yes.
17:30:11 **Q.** And we discussed this doc -- we discussed
17:30:13 this book before; correct?
17:30:14 **A.** We did.
17:30:15 **Q.** Okay. And you had --
17:30:19 And you believe this is authoritative;
17:30:20 correct?
17:30:21 **A.** Yeah, with the context I gave you what we're
17:30:24 trying to do in poor countries where the resources are
17:30:29 just limited, we tried to come up with some key points
17:30:32 for healthcare workers.
17:30:34 **Q.** Are you saying this only applies to poor
17:30:35 countries and not to the United States?
17:30:37 **A.** No, but that was the major -- that was the
17:30:38 major thrust.
17:30:40 **Q.** But I would hope that you would treat, like,
17:30:43 Third World countries the same as you would First

17:30:45 World countries.
17:30:45 **A.** I would.
17:30:46 MR. COREY GORDON: Object to the form of
17:30:47 the question.
17:30:48 **Q.** So I want to turn to Chapter 21. I only
17:30:52 printed up Chapter 21.
17:30:57 **A.** Yes.
17:30:59 **Q.** Let's look at page -- paragraph on the
17:31:04 bottom of page 134 that starts with "exogenous"?
17:31:07 **A.** Okay.
17:31:08 **Q.** And this is --
17:31:10 And you reviewed this before; correct?
17:31:11 **A.** I did see this.
17:31:12 **Q.** And you approved this for publication;
17:31:13 correct?
17:31:13 **A.** I did.
17:31:14 **Q.** Okay. "Exogenous contamination of wounds is
17:31:17 also important in the pathophysiology of SSIs,
17:31:21 particularly for clean surgical procedures."
17:31:23 Did I read that correctly?
17:31:24 **A.** Yes.
17:31:24 **Q.** And a clean surgical -- a clean surgical
17:31:27 procedure would be a total hip or total knee
17:31:30 arthroplasty; correct?
17:31:31 **A.** That's correct.

17:31:32 **Q.** "Airborne bacteria originating from the
17:31:34 patient or the surgical team suffice to create SSI in
17:31:38 these types of procedures, particularly when implants
17:31:41 are being placed (example, total hip prostheses)."
17:31:44 Did I read that correctly?
17:31:46 **A.** You did.
17:31:46 **Q.** Okay. Those are the surgeries that are at
17:31:48 issue in this case; correct?
17:31:49 **A.** Yes.
17:31:49 **Q.** Okay. Airborne contamination well well
17:31:53 affect other clean surgical procedures with long
17:31:55 exposure times and large surface areas, period.
17:31:58 Correct?
17:31:58 **A.** Yes.
17:31:59 **Q.** "The main source of airborne bacteria in the
17:32:01 OR originate primarily from the skin of individuals in
17:32:04 the room," period.
17:32:05 Did I read that correctly?
17:32:06 **A.** You did.
17:32:13 **Q.** "The number of persons present in the OR as
17:32:16 well as their level of activity, the type of surgery,
17:32:19 the quality of air provided, the rate of air exchange,
17:32:22 the quality of staff clothing, the quality of cleaning
17:32:26 process and the level of compliance with infection
17:32:27 control practices all influence airborne

17:32:31 contamination," period.
17:32:32 Did I read that correctly?
17:32:33 **A.** You did.
17:32:34 **Q.** And this is something that you agreed with
17:32:35 at the time that it was published; correct?
17:32:37 **A.** Agreed that, yes.
17:32:39 **Q.** Okay. "Although these may seem trivial
17:32:44 issues for contaminated procedures or dirty
17:32:46 procedures, they are very important to consider in
17:32:49 clean and clean-contaminated surgery," period.
17:32:52 Did I read that correctly?
17:32:53 **A.** You did.
17:32:53 **Q.** And that's something that you yourself as
17:32:55 the -- the main editor, published in 2008; correct?
17:33:00 **A.** We did.
17:33:02 MR. ASSAAD: I have no more questions.
17:33:04 MR. COREY GORDON: I'll just have a couple.
17:33:04 EXAMINATION
17:33:04 BY MR. COREY GORDON:
17:33:06 **Q.** Keep Exhibit 13 open. That paragraph that
17:33:09 counsel was just reading from in that sec -- Go back
17:33:15 to page 134.
17:33:17 **A.** Sure.
17:33:19 **Q.** Under **"Known Facts**."
17:33:22 **A.** Yes.

17:33:22 **Q.** Could you just read the first sentence,
17:33:24 please?
17:33:25 **A.** "Most SSIs arises from the patient's
17:33:28 endogenous flora which contaminate the wound by direct
17:33:31 contact."
17:33:32 **Q.** Thank you.
17:33:33 And if you could turn to page 138?
17:33:39 **A.** Yeah.
17:33:39 **Q.** And could you -- in the -- just read that
17:33:42 first paragraph under **"Controversial Issues"** there.
17:33:44 **A.** "ORs equipped with laminar airflow system
17:33:48 provide almost sterile air, yet a very few studies
17:33:52 show a significant decrease in SSI rates for surgical
17:33:56 procedures performed in this type of OR."
17:34:01 **Q.** And go ahead and read the rest of the
17:34:03 paragraph.
17:34:03 **A.** "Furthermore, some of these experiments did
17:34:06 not control for the antimicrobial regimen received as
17:34:10 surgical prophylaxis, thus precluding any conclusion
17:34:13 on the exact role of the laminar flow system.
17:34:16 Therefore, at this time no recommendation can be made
17:34:19 for the use of laminar flow ventilation in" the "ORs."
17:34:25 **Q.** This was published in 2008; is that right?
17:34:31 **A.** I think that's right. Yes.
17:34:33 **Q.** Thank you.

17:34:33 MR. COREY GORDON: I have nothing further.
17:34:34 MR. ASSAAD: I have one more question.
17:34:34 EXAMINATION
17:34:34 BY MR. ASSAAD:
17:34:39 **Q.** Go to page 134.
17:34:40 **A.** Oh, okay.
17:34:47 **Q.** When you read, "Most SSIs arise from the
17:34:49 patient's endogenous flora which contaminate the wound
17:34:52 by direct contact." "Direct contact" is -- is by --
17:34:56 by hand or some inanimate device; correct?
17:35:00 **A.** When I think of it I think that it's already
17:35:03 there, as you know, we've talked about this before,
17:35:05 and once the blade goes across that's direct contact
17:35:09 with the wound. Now she may mean, in addition, you
17:35:13 know, if there's a -- a scalpel that picks up part of
17:35:17 the flora and then is used in the wound. I would have
17:35:21 to go back and talk to her if -- what she meant more
17:35:25 commonly, or both.
17:35:26 **Q.** But you understand bacteria -- when they
17:35:29 talk about direct contact with bacteria, it's
17:35:31 transferring it from, like, your hand to a device or
17:35:33 your hand to a wound; correct?
17:35:35 **A.** That's correct.
17:35:37 MR. COREY GORDON: Object to the form of the
17:35:37 question.

17:35:37 MR. ASSAAD: That's all I have.
17:35:38 THE WITNESS: Okay.
17:35:38 MR. COREY GORDON: We're done. We'll read
17:35:40 and sign.
17:35:43 THE REPORTER: Off the record.
17:35:44 (Deposition concluded at 5:35 p.m.)